COMMONWEALTH MYCOLOGICAL INSTITUTE

AN ANNOTATED BIBLIOGRAPHY

OF

MEDICAL MYCOLOGY

1950

The contracted titles used in this bibliography are based on the *World List of Scientific Periodicals*, with the following exceptions:

B.A. = *Biological Abstracts*
B.H. = *Bulletin of Hygiene*
R.A.M. = *Review of Applied Mycology*
T.D.B. = *Tropical Diseases Bulletin*
V.B. = *Veterinary Bulletin.*

1554. **Nomenclature of fungi pathogenic to Man and Animals. Names recommended for use in Great Britain by the Medical Mycology Committee of the Medical Research Council.**—*Med. Res. Coun. Memor.* 23, 12 pp., London, H.M. Stationery Office, 1949. 6*d.*

A recent census showed that the 65 species of fungi pathogenic to man and animals in the British Isles have been recorded in this country under 150 names, and elsewhere under many more. The present list, for which no claim to completeness is made, has been prepared with the object of securing greater uniformity in the terminology applied to the commoner British medical fungi. The principles by which the Committee has been guided in its choice of names are briefly explained with appropriate examples.

1555. Reiss (F.). **Medical mycology.**—*Dermatologica*, 101, 1, pp. 41–55, 1950.

This review of current literature on medical mycology comprises sections, each followed by a bibliography, on general laboratory investigations, fungus allergy, dermatophytoses, tinea capitis, tinea versicolor and erythrasma, onychomycoses, diseases due to *Candida*, actinomycosis, blastomycosis, sporotrichosis, histoplasmosis, coccidioidomycosis, torulosis, and tropical and rare mycoses.

1556. Wilson (J. W.) & Plunkett (O. A.). **Practical medical mycology. A discussion of simplified laboratory methods.**—*Practitioner*, 163, 978, pp. 523–532, 3 figs., 1949.

Simple laboratory methods for the diagnosis of fungi pathogenic to man and the interpretation of results are described and discussed, the microscopic features of some of the organisms responsible, respectively, for superficial and deep mycoses being figured.

1557. Ainsworth (G. C.). **List of fungi recorded as pathogenic for Man and higher Animals in Britain.**—*Trans. Brit. mycol. Soc.*, 32, 3–4, pp. 318–336, 1950.

This catalogue of fungi pathogenic to man and higher animals in Britain is arranged alphabetically under classes, orders, and families. A key to the references cited numerically in the text is provided together with a host and fungus index.

1558. Ainsworth (G. C.). **Fungi and fungus diseases.**—*Brit. J. Derm. Syph.*, 61, pp. 421–424, 1949.

Any attempt to modernize medical mycology in Britain should begin by simplifying nomenclature and encouraging the use of names which are both intelligible and also acceptable to workers elsewhere. The 65 species of fungi pathogenic to man in Britain have been recorded in this country under about 150 names and in other countries under many more. Further, most names of human mycotic diseases, such as ringworm, tinea, tinea capitis, etc., are not precise, and may cover diseases due to more than one fungus. If further confusion is to be avoided, authors are urged to use care when selecting names for diseases and the causal fungi.

1559. Smith (D. T.). **Fungous infections in the United States.**—*J. Amer. med. Ass.*, 141, 17, pp. 1223–1225, 1949.

Serious mycotic infections are being recognized more frequently in the United States, particularly since the introduction of skin tests for coccidioidomycosis (*Coccidioides immitis*) and histoplasmosis (*Histoplasma capsulatum*) and the practice of making routine examination and cultures for fungi in all obscure cases. Of 250,000 admissions to the Duke Clinic and Hospital, Durham, North Carolina, over a 15-year period, 207 were diagnosed as mycoses, distributed as follows: actinomycosis (*Actinomyces bovis* [*A. israeli*]) 71, blastomycosis (*Blastomyces dermatitidis*) 59, moniliasis (*Candida albicans* and other *C.* spp.) 42, sporotrichosis (*Sporotrichum schencki*) 8, cryptococcosis (*Cryptococcus neoformans*) 5, coccidioidomycosis (*Coccidioides immitis*) 4, geotrichosis (*Geotrichum* spp.) 4, aspergillosis (*Aspergillus* spp.) 3, mycetoma 3, chromoblastomycosis [*Phialophora verrucosa*, etc.] 2, rhinosporidiosis (*Rhinosporidium seeberi*) 2, and histoplasmosis (*Histoplasma capsulatum*) 1. Instructions are given for direct examination, cultures, biopsies, and skin tests and complement fixation, and the uses and limitations of sulphonamide, penicillin, and iodide therapy are discussed.

1560. Kessel (J. F.), Yeaman (Antoinette), & Holtzwart (Frances). **Mycoses encountered in the Pacific Southwest Area of the United States of North America.**—*N.Z. med. J.*, 48, 266, pp. 346–356, 4 figs., 1949. [*T.D.B.*, 47, p. 82.]

The species of fungi isolated from systemic mycoses in Los Angeles County Hospital between 1933 and 1948, with the numbers of isolates, were: *Coccidioides immitis* 93, *Blastomyces dermatitidis* 4, *Histoplasma capsulatum* 2, *Sporotrichum schencki* 2, *Cryptococcus neoformans* 11, *Candida albicans* 6, *Actinomyces bovis* [*A. israeli*] 29, *Nocardia asteroides* 3, and *Aspergillus fumigatus* 1.

After briefly reviewing recent work on coccidioidomycosis, the authors discuss the importance of geographical distribution in the epidemiological study of fungus diseases, and illustrate it by reference to the three outstanding mycoses of the United States, viz., coccidioidomycosis, blastomycosis, and histoplasmosis.

A scheme is outlined for the laboratory diagnosis of mycoses. The complement-fixation test is described and shown to be superior to all other serological tests for the diagnosis of coccidioidomycosis and even for determining prognosis in this disease.

1561. Weed (L. A.) & Dahlin (D. C.). **Bacteriologic examination of tissue removed for biopsy.**—*Amer. J. clin. Path.*, 20, 2, pp. 116–132, 14 figs., 1950.

From the Mayo Clinic, Rochester, Minnesota, the authors report 14 cases illustrative of some of the common errors made in attempts to establish an etiological diagnosis based exclusively on a histological examination of tissue

removed for biopsy. For instance, of four cases diagnosed as tuberculosis, cultures of the tissue were positive for *Coccidioides immitis* in three and for *Actinomyces israeli* in one. It is emphasized that every specimen removed for biopsy should be studied as thoroughly as possible by cultural methods for diagnostic purposes.

1562. Haley (L. D.) & McCabe (Anne). **A mycologic study of seventy-one autopsies.**—*Amer. J. clin. Path.*, 20, 1, pp. 35–38, 1950.

The results of mycological studies in 71 routine autopsies at the Duke University School of Medicine, Durham, North Carolina, are reported and discussed. Fungi were recovered from 38 (53·5 per cent.) and the species represented included *Penicillium* spp. (23·7 per cent. of the isolates), *Aspergillus* spp. (13·2), *Candida albicans* (lungs only, 21·1), *C.* spp., among them *C. krusei* and *C. tropicalis* (23·7), and miscellaneous, e.g., *Paecilomyces*, *Streptomyces*, *Fusarium*, *Trichoderma*, *Rhizopus*, *Oospora*, *Sepedonium*, *Alternaria*, and *Geotrichum* (18·3).

1563. Hazen (Elizabeth L.) & Martin (Alice J.). **A study of specimens for evidence of mycotic infection.**—*Rep. N.Y. St. Dep. Hlth, 1948*, pp. 77–79, 1948.

Trichophyton mentagrophytes, *T. rubrum*, and *Microsporum canis* were isolated during 1948 from a greater number of skin scrapings at the Branch Laboratory, New York, than in previous years. *Candida albicans* comprised 70 per cent. of all the yeast-like micro-organisms studied. *Cryptoccocus neoformans* was twice recovered from a cerebrospinal fluid. *Blastomyces dermatitidis*, *Actinomyces* sp., *Geotrichum* sp., and *Candida albicans* were isolated from sputum. *Sporotrichum schencki* was isolated from a male patient who had pricked his finger with a thorn. *Actinomyces bovis* [*A. israeli*] was isolated from sputum of a male patient with many years' history of asthma and diffuse fibrosis of both lungs.

1564. Bergqvist (B.). **A case of mycosis in the frontal sinus.**—*Acta oto-laryng., Stockh.*, 33, 4–5, pp. 341–347, 1945. [*B.A.*, 24, No. 6835.]

External trepanation of the frontal sinus showed a dense mycelium probably belonging to a species of Hyphomycete. Infection is considered to have been secondary to other pathological changes.

1565. Fischer (E.). **Untersuchungen zur Frage der Nagelmykosen.** [Investigations on the question of mycotic infections of the nails.]—*Dermatologica*, 98, 4–6, pp. 237–241, 1949. [*B.A.*, 24, No. 4557.]

A new method of treating mycotic infections of the nails without operation is based on the fact that calcium thioglycollate completely dissolves the nail in a few days, thus permitting a disinfecting solution to reach the nail-bed.

1566. Fialho (A.). **A impregnação argêntica nas investigações micológicas.** [Silver impregnations in mycological investigations.]—*Arch. Histol. norm. pat.*, 3, 4, pp. 443–463, 13 figs., 1947. [*B.A.*, 24, No. 6841.]

The structural details of various parasitic organisms causing mycosis are illustrated by means of the technique of silver impregnation of Rio Hortega.

1567. Zimerinov (A. A.) & Rafalovich (S. M.). **Investigation of fungi in hanging drop cultures : preliminary report.**—*Arch. Derm. Syph., Chicago*, 61, 1, pp. 94–104, 9 figs., 1950.

The information presented in this paper has already been noticed from another source [No. 1219].

1568. Drouhet (E.) & Mariat (F.). **Sur la perte de fonction de synthèse de l'aneurine ou de ses constituents par quelques champignons pathogènes.** [On the loss of the capacity for synthesizing aneurin or its constituents by some pathogenic fungi.]—*C. R. Acad. Sci., Paris*, 230, 3, pp. 319–322, 1950.

The authors report and tabulate the results of determinations, by means of the *Phycomyces blakesleanus* test, of the capacity for vitamin B_1 synthesis, on a medium consisting of 1 gm. l-asparagine, 0·5 gm. magnesium sulphate, 1·5 gm. potassium phosphate, 30 gm. glucose treated with activated charcoal (norit A), and 1,000 gm. distilled water, of 19 species and strains of fungi pathogenic to man, classified in five groups. *Coccidioides immitis*, the sole representative of group I, made no growth at all. *Torulopsis* [*Cryptococcus*] *neoformans* and *Lichtheimia* [*Absidia*] *italica* (II) required the addition to the medium of the growth factors thiazole and pyramidine to enable them to synthesize vitamin B_1. *Sporotrichum beurmanni* [*S. schencki*], *S. schencki*, and *S. tropicale* (III) have retained their ability to synthesize thiazole but need an extraneous supply of pyramidine.

Candida albicans, *C. brumpti*, *C. parakrusei*, and *C. tropicalis* (IV) made poor growth on the experimental medium, with or without vitamin B_1, owing to the absence of biotin, which is indispensable for their normal development. *C. krusei*, *Hormodendrum pedrosoi*, *Histoplasma capsulatum*, *Aspergillus fumigatus*, *Sterigmatocystis* [*A.*] *nidulans*, and *Mucor corymbifer* [*Absidia corymbifera*] (V) can synthesize vitamin B_1 and its constituents. These results point to a possible correlation between the loss of the synthesizing function and parasitism.

1569. Carson (Layne E.) & Campbell (Charlotte C.). **The inhibitory effect of three antihistaminic compounds on the growth of fungi pathogenic for Man.**—*Science*, 111, 2895, pp. 689–691, 1 fig., 1950.

In *in vitro* experiments at the Army Medical Department Research and Graduate School, Washington, D.C., di-phenyl-pyraline at 0·25 mg. per ml. markedly restricted, and at 0·5 mg. inhibited the growth at 28° C. of the dermatophytes *Trichophyton mentagrophytes*, *T. rubrum*, *T. ferrugineum*, *Microsporum gypseum*, *M. lanosum* [*M. canis*], *Epidermophyton floccosum*, *Histoplasma capsulatum*, *Blastomyces dermatitidis*, and *Cryptococcus neoformans*. The effective concentrations of antistine ranged from 0·5 to 1 mg. Pyribenzamine was the least potent of the antihistamines tested. *Candida albicans* was unaffected by di-phenyl-pyraline and pyribenzamine at 1 mg. per ml., but its growth was restricted by antistine at 0·75 and inhibited at 1 mg.

In another series of tests on Sabouraud's dextrose agar with the addition of 10 per cent. horse serum, *T. mentagrophytes* was completely inhibited by di-phenyl-pyraline at 0·5 mg. per ml. at pH 5 and 7. Pyribenzamine at 1 mg. was effective at pH 7 but at pH 5 a concentration of 2 mg. was necessary to secure comparable results. Antistine was not inhibitory at either pH level in the presence of serum. *Cryptococcus neoformans*, *H. capsulatum*, *B. dermatitidis*, and *Sporotrichum schencki*, incubated on horse serum agar at 37°, were inhibited by di-phenyl-pyraline and pyribenzamine at 1 mg. per ml., but *Candida albicans* proved refractory to both drugs.

1570. Keeney (E. L.) & Eriksen (N.). **The chemical isolation and biologic assay of extracellular antigenic fractions from pathogenic fungi.**—*J. Allergy*, 20, 3, pp. 172–184, 1949. [*B.A.*, 23, No. 29614.]

The composition of synthetic media providing both rapid and luxuriant growth of *Trichophyton mentagrophytes* (two strains), *T. rubrum*, *Candida albicans*, *Blastomyces dermatitidis*, and *Histoplasma capsulatum* is described.

Protein and carbohydrate fractions were isolated from the concentrated broth filtrates of each of the above-mentioned fungi. Precipitin reactions, using either the protein fraction or the broth concentrate from the various fungi and rabbit antisera prepared by means of intravenous inoculations with live spore suspensions, were specific. No cross-reactions occurred. Precipitative antibodies were demonstrated in rabbits immunized with one strain of *T. mentagrophytes* (from Columbia University, New York) after three injections of live spores given in the course of a fortnight. Rabbits immunized with the several fungi were skin-tested with the carbohydrate and protein fractions obtained from the broth concentrate of the above-mentioned strain of *T. mentagrophytes*. Cross-reactions developed in animals immunized with both strains of *T. mentagrophytes*, *T. rubrum*, and *C. albicans*. A 33 to 75 per cent. alcohol fraction of *C. albicans* broth concentrate, giving negative reactions to protein tests and strongly positive to Molisch, sensitized guinea-pigs rapidly.

1571. Moore (M.) & Wooldridge (W.). **Antifungal properties of various extracts of Bacillus subtilis (Tracy strain) obtained in the bacitracin recovery process.**—*J. invest. Derm.*, 14, 4, pp. 265–281, 6 figs., 1 diag., 1950.

This is a fully tabulated account and discussion of the results of experiments reported from the Department of Dermatology of the Barnard Free Skin and Cancer Hospital, New York, and the School of Medicine, Washington University, St. Louis, Missouri. It appears that bacitracin, an antibiotic produced by *Bacillus subtilis*, and the several filtrates obtained in the recovery process are mildly active or inactive towards most of the pathogenic fungi tested and strongly antagonistic to *Nocardia brasiliensis* (1 in 100,000 to 1 in 1,000,000), *N. asteroides*, and *N. madurae* (1 in 10,000).

1572. Pearson (I. A.), Hammer (J. M.), Corrigan (K. E.), & Hayden (H. S.). **Studies on the metabolism of radioisotopes by various fungi and bacteria. The distribution of organisms containing radioiodine (I^{131}) in the animal body.**—*Amer. J. Roentgenol.*, 61, 6, pp. 839–846, 4 figs., 1949.

The authors' studies at Harper Hospital, Detroit, Michigan, led to the following conclusions. The distribution of pathogenic and non-pathogenic organisms, administered intravenously to laboratory animals, can be followed by first making the organism radio-active. The relative rates of destruction of non-pathogens are demonstrated by the decrease in radio-activity of the reticulo-endothelial system and increase in that of the thyroid when radio-iodine (I^{131}) is used as the tracer. The relative indestructibility of the pathogens, as compared with the non-pathogens, is illustrated by the retention of the radio-active tracer in the lesions of blastomycosis (*Blastomyces dermatitidis*). Various techniques, including radio-autographs, for the study of these effects are described.

1573. Hammer (J. M.), Pearson (I. A.), Corrigan (K. E.), Hayden (H. S.), & Mallmann (W. L.). **Use of radioactive isotopes in study of fungi and bacteria.** —*Amer. J. clin. Path.*, 20, 3, pp. 282–286, 3 figs., 1950.

Descriptions are given of two procedures for use in the application of radio-active isotopes in the study of fungi and bacteria [see preceding entry], namely, (I) an improved method of transfer of fungi, involving the addition of fluid to cultures in order to wet the spores and disperse them into the solution, rather than into the surrounding air, and (II) a technique for making auto-radiographs of micro-organisms.

1574. Costigan (P. G.). **A case of actinomycosis treated with streptomycin.**—*Canad. med. Ass. J.*, 56, p. 431, 1947. [*V.B.*, 19, No. 1767.]

Actinomycosis of the lower jaw in a human patient was successfully treated by 250,000 units of streptomycin administered intramuscularly in 2½ ml. of sterile water every three hours. Treatment was continued for five days.

1575. Mehl (W.). **Aktinomykose der Haut in individualpathologischer Betrachtung.** [Actinomycosis of the skin from the standpoint of individual pathology.]—*Dtsch. med. Wschr.*, 74, 22, pp. 706–710, 1949.

Conflicting theories relative to the etiology of actinomycosis are discussed in the light of the relevant literature, the author accepting the predominance of individual pathology (endogenous as opposed to exogenous mode of infection) in the etiology of the disease. Two cases are reported from the University Skin Clinic, Tübingen, to illustrate this standpoint, one of the metastatic-cutaneous type in a 15-year-old boy, and the other, of 18 years' standing, in a 46-year-old forester.

1576. Curban (G. V.). **Trichoptilosis due to trichomycosis palmellina pubiana (red): report of a case.**—*Arch. Derm. Syph., Chicago*, 61, 2, pp. 323–324, 3 figs., 1950.

The tenacious, lustreless, dark red concretions irregularly covering the pubic hairs of an 18-year-old male student at the University of São Paulo, Brazil, were shown by microscopic examination to consist of conglomerated, rod-like, thin-walled, short, straight or bent hyphal elements, accompanied by clumps of cocci, all characteristic of *Nocardia tenuis*. Cultures were not obtained. The colour and structure of the concretions permitted the diagnosis of trichomycosis palmellina of the red variety.

1577. Maragnani (U.). **Su di un caso atipico di actinomicosi.** [On an atypical case of actinomycosis.]—*G. ital. Derm. Sif.*, 89, 6, pp. 1232–1234, 1948.

A case of cutaneous actinomycosis, due to an unidentified *Actinomyces* with yellow grains, in a 43-year-old male peasant of Alessandria, Italy, presented certain atypical features, including the site of primary infection on the abdomen and the long duration (six years) of the disease. A cure was effected by means of penicillin and iodide therapy, supplemented by local lavages.

1578. Jentsch (M.). **Zur Behandlung der Aktinomykose.** [On the treatment of actinomycosis.]—*Ther. d. Gegenw., 1949*, 4, pp. 114–118, 1949.

From the Charité University Skin Clinic, Berlin, the author describes and discusses 11 cases of cervico-facial actinomycosis, all of which were successfully treated, five with auto-vaccines and six with penicillin.

1579. Jaworska-Kozakowa (Krystyna). **Dwa przypadki promienicy dróg łzowych wyleczonych penicylina.** [Two cases of actinomycosis of the lachrymal canaliculi treated by penicillin.]—*Ann. Univ. Mariae-Curie-Skłodowska*, Sect. D, 4, 5, pp. 115–119, 1 fig., 1949. [English summary.]

The successful therapy of two cases of actinomycosis of the inferior lachrymal canaliculus by means of penicillin is reported from the ophthalmic clinic of the Mari-Curie-Skłodowska University, Lublin, Poland. The surrounding area was injected with 1 ml. penicillin solution in novocaine, containing 20,000 units in the first case and 50,000 in the second. Every three hours a further dose of 200,000 units in 10 ml. solution was pipetted into the lachrymal sac. The patients speedily recovered and the symptoms did not recur.

1580. Jacob (P.), Renault (P.), Poulet (J.), Legrain (M.), & Martin (J.-G.). **Étude de 3 cas d'actinomycose viscérale à foyers multiples à prédominance pulmonaire.** [Study of three cases of visceral actinomycosis with multiple, predominantly pulmonary foci.]—*Bull. Mém. Soc. méd. Hôp. Paris*, Sér. 4, 66, 21–22, pp. 1033–1042, 3 figs., 1950.

Descriptions are given of the clinical features and post-mortem findings in three cases of visceral actinomycosis (*Cohnistreptothrix* [*Actinomyces*] *israeli*), predominantly involving the lungs, in male patients aged 39, 47, and 42, at the Hôpital Saint-Antoine, Paris.

1581. Scheffler (K.). **Beitrag zur Frage der Penicillin-behandlung der Aktinomykose.** [Contribution to the question of penicillin therapy of actinomycosis.] —*Arch. Ohr.- Nas.- u. KehlHeilk.*, 155, 6, pp. 639–648, 3 figs., 1949.

Following a general discussion of the pathogenesis, course, and treatment of actinomycosis, the author describes a fatal case of the disease involving the lungs in a 57-year-old male patient at the Tempelhof Hospital, Berlin. The intramuscular and endobronchial administration of penicillin resulted in an improvement of the pulmonary condition but failed to influence the concurrent infection of the dorsal muscular system.

1582. D'Eshougues (J. R.) & Zaffran (A.). **Actinomycose pulmonaire. Isolement du parasite par broncho-aspiration. Traitement par la streptomycine.** [Pulmonary actinomycosis. Isolation of the parasite by broncho-aspiration. Treatment by streptomycin.]—*Bull. Mém. Soc. méd. Hôp. Paris*, Sér. 4, 66, 23–24, pp. 933–939, 5 figs., 1949. [*B.H.*, 25, 144.]

A male patient aged 24, suffering from extensive actinomycosis of the abdominal wall, thoracic wall, and the subphrenic and subpleural regions was submitted to strong doses of organic iodide daily by the mouth, followed by 10,000,000 units of penicillin administered in 10 days, and 12 X-ray treatments. Eight months later the disease was still active and the pleura and lung had become invaded. A second course of similar treatment was also ineffective. At this stage a bronchoscopic exploration of the lung yielded *Actinomyces* [*Nocardia*] *asteroides*. Thereupon, streptomycin was administered 0·5 gm. doses by the mouth twice daily for 44 days, accompanied by deep X-ray therapy to a total of 4,200 r. Rapid improvement ensued, with progressive clearing of the pulmonary lesions, and three months after discharge from hospital the patient was still in good health.

1583. Fossati (C.). **Actinomicosi polmonare con metastasi ematogene da Actinomicete nell' Uomo.** [Pulmonary actinomycosis with haematogenous metastases caused by an Actinomycete in Man.]—*Schweiz. Z. Tuberk.*, 6, 4, pp. 225–234, 9 figs., 1949. [German, French, and English summaries.]

A fatal case of pulmonary actinomycosis in a young male patient at the Antitubercular Dispensary, Voghera (Pavia), Italy, is reported, with observations on the clinical course, and post-mortem findings. The causal organism is considered to be an aerobic species of *Actinomyces* with Gram-positive, branched hyphae and oval spores, differing from *A. corneus* in its inability to clarify milk.

1584. Rabin (C. B.) & Janowitz (H. D.). **Actinomyces in putrid empyema.**—*J. thorac. Surg.*, 19, 3, pp. 355–360, 1950.

Actinomyces bovis [*A. israeli*] was cultured in three cases of putrid empyema, resulting from the perforation of a lung abscess, at the Mount Sinai Hospital, New York. In one the organism was also recovered from carious teeth. None

of the patients (males, aged 46, 35, and 55) developed actinomycosis. The virulence of *A. israeli* is of a low order, the pathogen often being present in the lungs as a secondary invader or simply as a contaminant aspirated from the mouth and tonsils.

1585. Paalman (R. J.), Dockerty (M. B.), & Mussey (R. D.). **Actinomycosis of the ovaries and Fallopian tubes.**—*Amer. J. Obstetr.*, 58, 3, pp. 419–431, 2 figs., 1949.

The literature relating to 109 cases of actinomycosis (*Actinomyces bovis* or *A. israeli*) of the ovaries and Fallopian tubes is summarized and a detailed report given on eight cases from the files of the Mayo Clinic, Rochester, Minnesota.

1586. Sanford (G. E.) & Barnes (R. O.). **Massive penicillin therapy of abdominal actinomycosis.**—*Surgery, St. Louis*, 25, 5, pp. 711–722, 9 figs., 1949.

Full reports are given of two cases of abdominal actinomycosis (*Actinomyces israeli*) in male patients at the Kennedy Hospital, Memphis, Tennessee, one aged 21 and the other (coloured) 28. Neither responded to penicillin in moderately large doses (800,000 units daily), sulphonamides, adequate surgery, and supportive therapy, but the administration of massive doses of penicillin was followed by complete and apparently permanent cure in both cases. This result was achieved in 63 days in the first patient, after an illness of one year and four months, and in 48 in the second after nine months. In the past this form of the disease, though comprising only 18 to 22 per cent. of the cases of human actinomycosis, was responsible for near half the mortality.

1587. Kimmelstiel (P.). **Botryomycosis and actinomycosis of the intestine appearing as foreign body granuloma.**—*Sth. Surg.*, 16, 3, pp. 270–280, 9 figs., 1950.

Four cases of abdominal foreign body granulomata in male hospital patients at Norfolk, Virginia, and Charlotte, North Carolina, were associated with ingestion of bone. Two were identified as botryomycosis and two as actinomycosis. The two cases of actinomycosis are apparently the first on record in which the mode of entry of *Actinomyces* into the intestinal wall could be demonstrated. Bony spicules were found in the granulation tissue surrounding the bowel, and in one of them mycelia were shown to have travelled within the bone marrow. The clinical and anatomical features of intestinal botryomycosis and early actinomycosis are described.

1588. Gyarmati (L.). **Ritka lokalizációjú aktinomykosis.** Rare localization of actinomycosis.]—*Orv. Hetil.*, 90, 25, pp. 791–792, 1949. [Abs. in *Intern. Med.* (*Excerp. med.*, Sect. VI), 4, 7, p. 1022, 1950.]

A case of actinomycosis of the thigh is described from Budapest. Local therapy with penicillin after excision proved successful.

1589. Shelton (G. W.), Garber (C. Z.), & Smith (A. De F.). **Actinomycosis of the knee : report of a case.**—*Arch. Surg., Chicago*, 60, 4, pp. 771–778, 6 figs., 1950.

Actinomyces bovis [*A. israeli*] was the agent of a swelling of the right knee following an injury in a 17-year-old female patient at the New York Orthopaedic Hospital. The clinical features of the case are reported. A cure was effected by a combination of surgery and penicillin therapy.

1590. Highley (G. B.). **Actinomycosis, subgluteal bursa.**—*Memphis med. J.*, 25, 7, pp. 112–113, 1950.

A case of actinomycosis (*Actinomyces* sp.) of the subgluteal bursa in a 33-year-old farmer is reported from Memphis, Tennessee. The patient responded favourably to penicillin and sulphadiazine therapy combined with surgical drainage of the abscess.

1591. Suteev (G. O.). **Immune therapy of actinomycosis.**—*Khirurgiya, 1949*, 8, pp. 42–49, 1949. [Abs. in *Intern. Med.* (*Excerp. med.*, Sect. VI), 4, 7, p. 1022, 1950.]

Two extracts, actinolysate and actinofiltrate, were prepared from lysed cultures of *Actinomyces* for purposes of immunotherapy experiments. Of 12 patients treated by intramuscular injections at three- to five-day intervals with 5 ml. actinofiltrate, seven (including one with pulmonary actinomycosis) appeared to be completely cured, while the condition of the remaining five was much improved. Used in combination with X-ray therapy the injections gave less satisfactory results. The actinofiltrate is also applicable in the diagnosis of early or doubtful cases of actinomycosis in a manner similar to the Mantoux test for tuberculosis. Eight cases are reported in confirmation of the author's claims.

1592. Asnin (D. I.). **Intracutaneous immunotherapy of actinomycosis.**—*Sovetsk. Med., 1949*, 11, pp. 23–24, 1949. [Abs. in *Intern. Med.* (*Excerp. med.*, Sect. V), 4, 7, p. 1023, 1950.]

Actinolysate (actolysed broth culture of aerobic *Actinomyces* passed through a Seitz filter) [No. 1591] was injected intracutaneously into 145 patients suffering from actinomycosis in slowly increasing doses from 0·5 to 2 ml. in courses of 20 to 25 (two to three weekly). Cures were effected in 79 cases, 41 were much improved, 19 improved, three died, and three discontinued treatment.

1593. McVay (L. V.), Dunavant (D.), Guthrie (Frances), & Sprunt (D. H.). **Treatment of actinomycosis with aureomycin : report of a case.**—*J. Amer. med. Ass.*, 143, 12, pp. 1067–1068, 1950.

The successful treatment with aureomycin of actinomycosis (*Actinomyces bovis*) [*A. israeli*] of the right inframandibular area in a 36-year-old negro farmer is reported from the John Gaston Hospital, Memphis, Tennessee.

1594. Negroni (P.) & Feldman (R.). **Constituyentes antigénitos de los Actinomyces y su empleo en las reacciones inmunoalérgicas.** [Antigenic constituents of *Actinomyces* and their use in immuno-allergic reactions.]—*Rev. Inst. bact., B. Aires*, 14, 1, pp. 306–310, 1949. [Abs. in *Med. Microbiol. Hyg.* (*Excerp. med.*, Sect. IV), 3, 8, p. 874, 1950.]

Positive precipitin and cutaneous reactions were obtained in patients suffering from actinomycosis (*Actinomyces*) [? *israeli*].

1595. Hager (H. F.), Migliaccio (A. V.), & Young (R. M.). **Nocardiosis. Pneumonia and empyema due to Nocardia asteroides.**—*New Engl. J. Med.*, 241, 6, pp. 226–231, 6 figs., 1950.

The literature relating to infections by *Nocardia asteroides* is reviewed and two cases are reported from the Rhode Island Hospital, Providence, Rhode Island. In the first patient, a 16-year-old girl (whose case is described in detail), the pulmonary infection was complicated by empyema. Treatment by

means of surgical drainage and combined sulphadiazine, penicillin, and streptomycin therapy was apparently successful. A second strain of the fungus was isolated from the sputum of a 64-year-old woman with bilateral apical pulmonary lesions. It was shown by *in vitro* tests to be inhibited by penicillin, streptomycin, and aureomycin.

1596. Carroll (D. S.). **Mycetoma pedis.**—*Radiology*, 53, 1, pp. 81–84, 2 figs., 1949. [Spanish summary.]

A case of mycetoma pedis or Madura foot (*Actinomyces nocardia*) [*Nocardia madurae*] in a 37-year-old coloured male patient at the John Gaston Hospital, Memphis, Tennessee, is reported. The characteristic clinical feature of the disease is a chronic, long-standing, globose swelling of the foot, with multiple draining sinuses. The principal roentgenographic findings are cystic destruction of bone, with little surrounding bone reaction, and irregular thinning of the shafts of the tarsals, metatarsals, and phalanges.

1597. Lall (H. K.) & Rajagopalan (V. R.). **Actinomycotic dermatitis in cross merino Lambs.**—*Indian J. vet. Sci.*, 19, 1, pp. 1–4, 3 pl., [1949].

A description is given of a form of dermatitis affecting lambs at the Government Livestock Farm, Hissar, India. Of 268 Hissardale lambs, 91 (34 per cent.) contracted the disease and 26 (28·6 per cent.) of the affected animals died. Among Lohi lambs, 21 out of 170 (12·36 per cent.) became affected, and one (4·8 per cent.) died. The disease was confined to animals not more than a fortnight old. The affected portion of the skin was thick and hard, the back often being extensively involved, in which case the lamb appeared as if encased in a plaster-of-Paris jacket. The wrinkled skin sometimes cracked, and wounds developed which became infested with maggots. Histopathological examination showed the presence of a rod-shaped, Gram-positive organism forming a mycelium with infrequent branching. Further studies are in progress.

1598. McTier (L. A. W.). **Mycotic dermatitis in cattle in N.S.W.**—*Yearb. Inst. Insp. Stk, N.S.W., 1948*, p. 81, 1948. [*V.B.*, 20, p. 70.]

Three cows in New South Wales developed horny, brownish scabs on the back, rump, and sides, which showed the presence of *Actinomyces dermatonomus*.

1599. Lewis (E. F.). **Penicillin therapy in actinomycosis in cattle.**—*Vet. Rec.*, 59, 435, 1947. [*V.B.*, 19, p. 654.]

In six cases of bovine clinical actinomycosis involving the upper and lower jaws penicillin in aqueous solution or oil and wax emulsion was injected into several sites over the enlarged areas in doses totalling 1 to 2 m. units. The enlargement disappeared, without recurrence, in ten days to four months.

1600. Blackaller (A.). **Estudio de los hongos atmosféricos en la Ciudad de Guadalajara, Jalisco.** [Study of atmospheric fungi in the city of Guadalajara, Jalisco.]—*Medicina, Méx.*, 30, 600, pp. 111–115, 7 graphs, 1950.

Species of *Hormodendrum* were the predominant fungal contaminants of the atmosphere of Guadalajara, Jalisco, Mexico, during the period from May to November, 1948, followed by *Alternaria*. Also represented were *Aspergillus niger*, *A. flavus*, species of *Acrothecium*, *Penicillium*, *Botrytis*, *Helminthosporium*, *Monilia sitophila*, *Mucor*, and *Rhizopus*. A group of 124 allergic patients at the Hospital Civil displayed marked sensibility to intradermal

injections with antigens of a number of the foregoing, their reactions being rated as follows: ±20·91 per cent., +45·22, ++26·61, +++6·46, and ++++0·80 per cent. Among the 204 non-allergic patients, 9 and 3·5 per cent. showed the ± and + reactions, respectively.

1601. Kaplan (L.). **A survey of air-borne fungi of the Boston area in relation to inhalant energy.**—Abs. in *Amer. J. Bot.*, 36, 10, p. 810, 1949.

A survey of air-borne fungi carried out over Boston from January, 1948, to the end of January, 1949, showed that a high point in the total number of fungus spores found in the air occurs in April. This is followed by a slight decline in summer and a subsequent gradual rise to major peaks in September, October, and November, whereas the pollens almost disappeared from the atmosphere from mid-September to mid-November. Clinical tests during this period demonstrated many cases of inhalant allergies giving positive reactions to mould extracts. *Alternaria*, *Cladosporium*, *Penicillium*, *Aspergillus*, and Sphaeropsidales tend to predominate throughout the year and make up about 60 per cent. of the total mould count. From mid-September to mid-November, *Alternaria* greatly outnumbers the other dominant moulds, and clinical cases also show much more sensitivity to *Alternaria* than to other moulds.

1602. Wallace (M. Elizabeth), Weaver (R. H.), & Scherago (M.). **A weekly mold survey of air and dust in Lexington, Kentucky.**—*Ann. Allergy*, 8, 2, pp. 202–211, 228, 3 graphs, 1950.

In further extensive studies on the distribution of moulds in in- and outdoor air and house dusts from several sites at Lexington, Kentucky [No. 1337], using Sabouraud's and potato dextrose agar, the following results were obtained. *Penicillium* (represented, *inter alia*, by *P. albicans*, *P. citrinum*, and *P. frequentans*) and *Aspergillus* (including *A. fumigatus*, *A. luchuensis*, and *A. niger*) were the most prevalent genera in both summer and winter from all sources. *Mucor piriformis* was confined to indoor, and *Monilia geophila* and *Stemphylium piriforme* to outdoor air. *Alternaria geophila*, which was encountered more frequently in the summer than in the winter, occurred in outdoor air and house dusts. *Oospora variabilis* was limited to the air (mostly indoor). The aerial mould counts were lower in winter than in summer, but the dust population did not vary with the season.

1603. Reymann (F.) & Schwartz (M.). **House dust and fungus allergy.**—*Acta path. microbiol. scand.*, 24, 1, pp. 76–85, 1947. [*B.H.*, 25, 142.]

Intracutaneous tests in Denmark showed 13 of 22 patients to be sensitive to extracts of their own house dust and five to be sensitive also to extracts of [unspecified] strains of *Penicillium*, *Aspergillus*, *Mucor*, *Fusarium*, and *Alternaria*. Only one patient of the nine insensitive to their own house dust reacted positively to fungus extracts. Most of the patients were insensitive to most of the 239 fungi isolated from house dust (6 to 21 strains from any one sample), and it is concluded that fungus allergens are probably not the cause of house dust allergy. Patients allergic to fungi were generally also allergic to house dust, though the converse was not true.

1604. Nilsby (I.). **Allergy to moulds in Sweden.**—*Acta allergol.*, 2, 1, pp. 57–90, 1 fig., 5 graphs, 1949.

Studies on the mould spore content of the air at Örebro (60,000 inhabitants), Gothenburg (325,000), and Stockholm (675,000) showed that the predominant species were *Hormodendrum*, *Penicillium*, *Pullularia*, and yeast-like fungi,

including *Monilia* [*Candida*], *Torula*, and *Saccharomyces* spp. In buildings *Penicillium* was the most prevalent species, whereas *Aspergillus* and *Mucor* were commoner out-of-doors. There was no difference in spore counts between Örebro and the surrounding country, but in the coastal cities the numbers were lower, mainly because of infrequency of *Hormodendrum*. Along the timber line the spore content was generally smaller, but high values were occasionally recorded.

Extracts at a concentration of 1 in 2,000 were made of *Hormodendrum*, *Penicillium*, *Mucor*, and *Botrytis* and used for intracutaneous tests on 123 patients with a diagnosis of bronchial asthma, of whom 23 (18 per cent.) reacted positively to one or more species. Of 1,250 cases of mixed allergic and suspected allergic symptoms, 127 (10 per cent.) reacted positively to one or more of the moulds. A probability diagnosis of clinical mould allergy was made in 12 cases of bronchial asthma (10 per cent.) and in 52 of allergy (4 per cent.). In the case of *Penicillium* allergy proved to be specific to particular species, so that in each case an analysis of the patient's home surroundings should be made for specific types of mould and the appropriate tests performed with the extracts thus obtained.

1605. Toro (R. A.). **Studies on the aerobiology of Puerto Rico.**—*J. Agric. P.R.*, 30, 2, pp. 97–101, 1946. [Received March, 1950.]

During three years' study of the fungi present in the air over Puerto Rico, made to ascertain if any relation exists between them and the numerous cases of nasal allergy occurring in the island, the author exposed plates of Sabouraud's media for five minutes in different localities, especially in the residences of asthmatic sufferers. An annotated list is given of the 24 species most commonly found, including eight species of *Aspergillus* and five of *Penicillium*.

1606. Bereston (E. S.). **Further studies on Aspergillus infections of the nails.**—*Sth. med. J.*, 43, 6, pp. 489–492, 3 figs., 1950.

Four cases of onychomycosis are reported from Baltimore, the associated organism in (1) a 41-year-old female, being *Aspergillus flavus*; in (2) and (3) 35- and 50-year-old males, *A. nidulans*; and in (4) a 32-year-old male, *A. glaucus* and *Trichophyton rubrum*. Diagnosis rests on repeated mycological studies, involving both microscopic and cultural examinations. Verification should also be sought by histological investigation of the nail plates. Ammoniacal silver nitrate N.F. was found to be of some value in the therapy of this very obstinate condition.

1607. McKee (E. E.). **Mycotic infection of brain with arteritis and subarachnoid hemorrhage. Report of a case.**—*Amer. J. clin. Path.*, 20, 4, pp. 381–384, 3 figs., 1950.

Particulars are given of the clinical and post-mortem findings in a case of fungal infection of the sphenoid sinus, with secondary involvement of the brain, possibly due to a species of *Aspergillus*, in a 60-year-old coloured male patient at Roper Hospital, Charleston, South Carolina. The brain has been affected in five previously reported cases of aspergillosis, in three of which the primary focus was in the accessory sinuses.

1608. Conley (J. J.). **Evaluation of fungous disease of the external auditory canal.**—*Arch. Otolaryng., Chicago*, 47, 6, pp. 720–745, 1948.

Following a brief historical review of medical mycology, and a summary of the classification and characteristics of the fungi concerned, the author gives

a comprehensive survey of the literature on otomycosis. A discussion is then given of 32 cases studied in the Philippines, the patients being members of the United States Armed Forces and their average age 26·5 years. *Pseudomonas aeruginosa* was the predominant organism, occurring in 22 cases, accompanied in one by *Mucor* and in three by *Aspergillus niger*, which was also present in one instance with diphtheroids. It would thus appear that the prevalence and significance of fungi in cases of external otitis have been over-estimated.

1609. Mackinnon (J. E.). **Clasificación de las micosis con especiales referencias a la aspergilosis pulmonar.** [Classification of the mycoses, with special reference to pulmonary aspergillosis.]—*Hoja tisiol.*, 9, 4, pp. 321–329, 1949.

This is a critical discussion of some important contributions to the literature on the classification of the mycoses, with special reference to pulmonary aspergillosis and observations on a case of this disease caused by *Aspergillus fumigatus* in Uruguay, which is in course of publication by R. Sotelo in *Rev. Inst. Cien. biol. Montevideo.*

1610. Hertzog (A. J.), Smith (T. S.), & Goblin (M.). **Acute pulmonary aspergillosis. Report of a case.**—*Pediatrics*, 4, 3, pp. 331–336, 5 figs., 1949. [Spanish summary.]

A fatal case of acute pulmonary aspergillosis in a five-year-old boy is fully reported (including the post-mortem findings) from the Northwestern Hospital, Minneapolis, Minnesota. The causal organism was isolated in pure culture from the lung tissues and identified as *Aspergillus fumigatus*. The boy's seven-year-old sister also succumbed to the disease about the same time, but the fungus was not isolated in this case.

1611. Cogan (D. G.). **Endogenous intraocular fungous infection : report of a case.**—*Arch. Ophthal., N.Y.*, 42, 5, pp. 666–682, 12 figs., 1949.

The present report from Boston, Massachusetts, of endogenous intra-ocular fungal infection in a 70-year-old female brings the total number of records of such cases to 12, of which three were attributed to a Blastomycete, three to an Actinomycete-like organism, and five to *Aspergillus fumigatus*. The author's case is also tentatively referred to a species of *Aspergillus*. The onset of infection was characterized by loss of vision, redness, chemosis, and proptosis, with no evidence of systemic disease. The condition necessitated the removal of the eye. Histologically the significant feature was the presence of abscesses with many giant cells in the vitreous and in the inner portion of the retina. Near or within them were the fungus elements, consisting of dichotomously branched, sparsely septate hyphae.

1612. Stanley (N. F.). **Biological properties of polysaccharide and lipoid fractions from a pathogenic strain of Aspergillus fumigatus. The augmenting action of lecithin and the lipoids of Aspergillus fumigatus and Listeria monocytogenes in antibody formation using Salmonella typhi-murium as an antigen.**—*Aust. J. exp. Biol. med. Sci.*, 27, 1, pp. 99–115, 1950.

The condition of experimental aspergillosis in animals is discussed on the basis of observations made at the Prince Henry Hospital, Sydney, using a strain of *Aspergillus fumigatus* isolated from a Gentu penguin which died of the disease soon after importation from Antarctica. The symptoms included monocytosis, ataxia, adhesions in the peritoneal cavity, and tubercle formation. Inoculation with a crude mycelial extract, a pure polysaccharide fraction, and an acetone-ether-soluble lipoid fraction failed to induce ataxia or adhesions,

but the lipoid caused tubercle formation and monocytosis. The polysaccharide fraction was antigenic and of low toxicity. It produced an area of erythema in the skin of immune animals or of those at the late stage of the disease when tubercles or adhesions or both were present.

The experiments described in the second paper relate to the augmenting properties of the lipoids of *Listeria monocytogenes* and *Aspergillus fumigatus*, which induce a marked monocytic reaction in laboratory animals.

1613. El Zahawi (S.). **Aspergillus infection of the urinary tract.**—*J. roy. Fac. Med., Iraq*, 11, 1, pp. 12–14, 2 pl., 1947. [Received October, 1949.]

A calculus passed by a 36-year-old male patient two months after removal of a calculus by operation was found to present a fine meshwork of *Aspergillus* mycelium, with hard calcium oxalate crystals in betweem. A sterile catheter specimen of urine, when cultured, revealed colonies of *Staphylococcus pyogenes aureus* and *A. fumigatus*. After penicillin injections (400,000 units) the staphylococci disappeared but *A. fumigatus* was still present. Crooks's collosol iodine improved the condition, but when the drug was stopped *Aspergillus* mycelium was again passed. It is suggested that the fungus might have originated in the catgut used in the operation.

1614. Salisbury (R. M.). **Poultry diseases caused by mould and yeast infections.**—*N.Z. J. Agric.*, 79, 6, p. 558, 1 fig., 1949.

This paper reports mortalities in chicks during the past two seasons in New Zealand due to aspergillosis or 'brooder pneumonia' (*Aspergillus fumigatus*) and moniliasis (*Monilia* [*Candida*] *albicans*). The use of mouldy litter in hatcheries has caused these diseases, and their symptoms and control are described.

1615. Hülphers (G.) & Lilleengen (K.). **Mögelsvampsinfektion, aspergillos, hos Hare och vilt levande Fågel.** [Aspergillosis in Hares and wild Birds.]—*Svensk VetTidskr.*, 52, pp. 235–239, 243–262, 1947. [English summary: *V.B.*, 19, 473, 1949.]

Aspergillosis, caused by *Aspergillus fumigatus*, was found [in Sweden] in 9 hares, 20 capercailzie, 3 blackcock, 1 bastard tetraonid, 4 partridges, 1 ptarmigan, 2 pheasants, 2 mallards, and 1 wood-pigeon. The morbid changes associated with the disease usually appear in hares in the lungs, though they may also occur in the kidneys; in wild birds they generally affect the lungs, tracheae, and air sacs, and occasionally the intestine.

1616. Erich (J. B.). **Blastomycosis of the oral cavity and nose. Report of a case.**—*Amer. J. Orthodont.*, 33, 8, pp. 604–606, 3 figs., 1947.

A case is reported of a male patient, aged 51, at Rochester, Minnesota, showing a warty, inflamed mass with a few small pustules covering the bottom third of the nose. On the buccal surface of the left cheek was a rough, papillary growth about 2 cm. in diameter. A lesion was found in the right lung near the cardiophrenic angle, apparently the site of an inflammatory process. Histological examination of tissue from the nasal lesion and the oral growth revealed epithelial hyperplasia due to blastomycosis. Blastomycetes were found in sections from both lesions. The growth on the nose and cheek was immediately destroyed by surgical diathermy (electrical coagulation). Roentgen therapy was applied over the chest, and potassium iodide was given. The treatment was successful and no recurrence took place.

1617. Tchobanian & Sirkis (C.). **Case of blastomycosis.**—*J. roy. Fac. Med., Iraq*, 11, 2, p. 56, 1947.

Three round, slightly elevated patches, about 1½ in. in diameter and presenting a cauliflower-like appearance on the back of the left hand, the left elbow, and the medial side of the right forearm of a female patient aged 60, were shown by histopathological examination of the tissue to be due to blastomycosis.

1618. Theodorides (E.) & Koutrolikos. **Blastomycosis of the conjunctiva.**—*Amer. J. Ophthal.*, 33, 4, pp. 535–538, 8 figs., 1950.

Two cases of blastomycosis (*Blastomyces* sp.) involving the conjunctiva in soldiers (25 and 23 years old) are reported from the Military Hospital, Joannina, Greece. A cure was effected in the first case by daily applications for four days of a 2 per cent. solution of silver nitrate, and in the second by three treatments with 20 per cent. zinc sulphate.

1619. Hiatt (J. S.) & Lide (T. N.). **Blastomycosis complicating Boeck's sarcoid.**—*N. C. med. J.*, 10, 12, pp. 650–656, 6 figs., 1949.

At the autopsy on a male negro patient at the North Carolina Sanatorium, McCain, who died three years after admission for suspected pulmonary tuberculosis, *Blastomyces dermatitidis* was found in large numbers in the lung lesions and to a lesser extent in the hilar glands, kidneys, and spleen. The sequence of events in this case (apparently the first on record) is believed to lead from pulmonary sarcoidosis through tuberculosis of the lungs, cervical glands, and genito-urinary tract to blastomycosis, which supervened as a rare and fatal complication.

1620. Colbert (J. W.), Strauss (M. D.), & Green (R. H.). **The treatment of cutaneous blastomycosis with propamidine. A preliminary report.**—*J. invest. Derm.*, 14, 2, pp. 71–73, 1950.

The treatment of a case of cutaneous blastomycosis (*Blastomyces dermatitidis*) involving the left shoulder (where the infection originated) and chest of a 25-year-old male patient at the Yale University School of Medicine consisted of daily topical applications for nine days of propamidine incorporated into 9 per cent. methyl cellulose gel to a concentration of 0·1 per cent. A second similar course of treatment was given six weeks after the completion of the first. Although complete healing has not occurred, a suggestively favourable clinical response has been observed.

1621. Smith (D. T.). **Immunologic types of blastomycosis : a report on 40 cases.**—*Ann. intern. Med.*, 31, 3, pp. 463–469, 1949.

From a study of 40 cases of blastomycosis (*Blastomyces dermatitidis*) at the Duke University Hospital, Durham, North Carolina, it is concluded that the prognosis depends in part on the extent of the infection and partly on the immunologic response of the patient. It is best in persons with positive skin tests and no demonstrable antibodies in their serum, and poorest in those reacting negatively to skin tests and having a high titre of complement-fixing antibodies. Patients with positive skin tests should be desensitized before treatment with iodides irrespective of the presence or absence of antibodies. Those with neither positive skin tests nor complement-fixing antibodies should be actively immunized with a heat-killed vaccine made from the yeast phase of the fungus before iodide therapy.

1622. Nickerson (W. J.) & Edwards (G. A.). **Studies on the physiological bases of morphogenesis in fungi. I. The respiratory metabolism of dimorphic pathogenic fungi.**—*J. gen. Physiol.*, 33, 1, pp. 41–55, 4 graphs, 1949.

The interconversions of the mycelial (M) and yeast (Y) forms in *Blastomyces dermatitidis* and *B.* [*Paracoccidioides*] *brasiliensis* are characterized as examples of thermal dimorphism, being apparently dependent only on the temperature of incubation. The change in morphology consequent on Y to M conversion is believed to result from the selective inhibition of cell division without the simultaneous inhibition of growth. To analyse this operation the effect of temperature on oxygen consumption by each of the dimorphic forms was studied. In the absence of external substratum the Y forms consume five or six times more oxygen per unit dry weight than do the M.

A study of the effect of a wide range of temperatures on oxygen consumption by the M forms indicates the operation of two rate-limiting processes, (*a*) with an activation energy of 13,250 calories per gm. molecule over the range 5° to 30° C., and (*b*) reversible enzyme inactivation, the latter assuming importance in the higher temperature range. On abrupt, large changes in temperature the balance between these two rate-limiting reactions is apparently disrupted. The effect of such a disruption of balance, and of increasing enzymic inactivation, on a competition between enzyme systems for substratum for cell elongation and division, is considered in explanation of the observed dependence of the cell division mechanism on the maintenance of an elevated temperature.

1623. Saunders (L. Z.). **Cutaneous blastomycosis in the Dog.**—*N. Amer. Vet.*, 29, pp. 650–652, 1948. [*V.B.*, 19, 596.]

An account is given of an infection of a spaniel dog by *Blastomyces dermatitidis*. There was laceration of the foot and a growth, which was removed, was present on one ear. A week later, the animal became feverish. After another week, an ulcer developed on the foot, followed a day later by one on the back. The breath became foul, and after a further week a large fluctuating swelling appeared in the intermandibular space; there were two ulcers on the surface of the swelling and others elsewhere on the body. The growth removed from the ear is described, the presence of Blastomycetes being demonstrated. The dog died after 18 days' illness.

1624. Skinner (C. E.). **Generic name for imperfect yeasts, Cryptococcus or Torulopsis?**—*Amer. Midl. Nat.*, 43, 1, pp. 242–250, 1950.

The author discusses the usage of the two generic names *Cryptococcus* and *Torulopsis* and proposes that both should be retained, the non-fermenting, medical species being included in the first and the fermenting ones in the second.

1625. Kressmann (M.). **Zur Klinik der Blastomykose Typus Busse-Buschke und Typus Gilchrist durch Torulopsis minor (Lodder).** [On the clinical aspect of blastomycosis, type Busse-Buschke and type Gilchrist, caused by *Torulopsis minor* (Lodder).]—*Arch. Derm. Syph., Berl.*, 188, 4–5, pp. 550–566, 9 figs., 1949.

Following a brief introductory statement on the definition of the term 'blastomycosis', the author fully describes two cases of the disease, both in female patients, one 26 years old and the other 68, at the University Skin Clinic, Erlangen, in which *Torulopsis minor* was demonstrated by histological studies and pure culture as the causal organism. In the former case the disease,

originating in the finger nails, was diagnosed as 'blastomycosis of the Busse-Buschke type' and in the latter, in which the left middle finger was first involved, as of the 'Gilchrist type'. Both patients were cured by prolonged internal medication with iodine and the parenteral administration of auto- and heterovaccines, supplemented by topical applications of a new aromatic disinfectant containing two aromatic nuclei with a sulphur atom as bridge ('D 25'). It is concluded that the distinction hitherto drawn between the European and American forms of the disease can no longer be rigidly maintained.

1626. André (L.), Dessausse (P.), Moncourier (L.), Billiotet (J.), & Deletraz (R.). **Un cas mortel de blastomycose thoracique avec envahissement du canal medullaire.** [A fatal case of thoracic blastomycosis with invasion of the medullary canal.]—*Bull. Mém. Soc. méd. Hôp. Paris*, Sér. 4, **66**, 21–22, pp. 1046–1049, 1950.

A species of *Cryptococcus* was associated with this case of thoracic blastomycosis in a 71-year-old patient at the Hôpital Maritime, Cherbourg, the clinical course and post-mortem findings in which are reported.

1627. Stanley (N. F.). **Polysaccharide haptens from Torula histolytica.**—*Aust. J. exp. Biol. med. Sci.*, **27**, 5, pp. 409–415, 1949.

The isolation and properties of some polysaccharide fractions of *Torula histolytica* [*Cryptococcus neoformans*], isolated from the cerebrospinal fluid and at autopsy from the meninges and lungs of a patient at the Prince Henry Hospital, Sydney, are described and the experimental data tabulated. The fractions behave as haptens and their toxicity to rabbits is of a low order.

1628. Ravits (H. G.). **Cutaneous cryptococcosis. A survey of Cryptococcus on normal and pathological skin.**—*J. invest. Derm.*, **12**, 5, pp. 271–283, 1949.

The terminology of *Cryptococcus* is discussed in relation to its classification among the yeast-like fungi, and the morphology of the genus is described. A survey is presented of the incidence of *Cryptococcus* on 100 normal persons (students at the University of Minnesota) and 100 with various skin diseases at the University Hospitals and the laboratory procedures used are described. Many 'species' of *Cryptococcus* were isolated from 41 and 56 of the 'pathological' and 'normal' groups, respectively. Of the 53 cultures obtained from the former, only eight fermented sugars, whereas of 78 from the latter, 21 were active in this respect.

1629. Schmidt (E. G.), Alvarez-de Choudens (J. A.), McElvain (Norma F.), Beardsley (Jane), & Talab (Salah A. A.). **A microbiological study of Cryptococcus neoformans.**—*Arch. Biochem., N.Y.*, **26**, 1, pp. 15–24, 1950.

At the School of Medicine, Baltimore, Maryland, *Cryptococcus neoformans* was grown in a liquid medium containing glucose, ammonium and inorganic salts, and thiamine, and on Sabouraud's agar. Of a number of chemical compounds tested for their inhibitory action on the fungus, the most effective on the liquid substratum were three vitamin K derivatives and the antibiotics actidione and tomatin [*R.A.M.*, **26**, p. 118], followed by biacetyl, chlorothymol, dithiobiuret, and the quaternary ammonium compounds. On the agar medium only one of the above-mentioned vitamin K derivatives (synkamin, 4-amino-2-methyl-1-naphthol hydrochloride) proved to be fungistatic, while other effective inhibitors included biacetyl, the quaternary ammonium compounds, methyl-5-nitro-2-furoate, dithiocyanoacetanilide, pseudomethyl acetylacylate, hexachlorophene, 8-hydroxyquinoline, dime-

thyldichlorosuccinate, the higher alkylpyridinium compounds, actidione, and tomatin, and moderate inhibitory activity was exerted by the dyes phenosafranin, methyl violet, and brilliant violet. The injection of some of the more promising of these substances into mice inoculated with the pathogen failed to influence the course of the disease.

1630. Stevenson (L. D.), Vogel (F. S.), & Williams (V.). **Cryptococcosis of the central nervous system and incidental cryptococcic granuloma.**—*Arch. Path.*, 49, 3, pp. 321–332, 7 figs., 1950.

At the autopsies on three persons who died from unrelated causes at the New York Hospital, solitary encephalitic cysts containing *Cryptococcus histolytica* [*C. neoformans*] were found incidentally in the brains. In each case the cyst was surrounded by a thick, fibrous capsule, indicating the arrest of the process. Two other cases are described (one from the literature on the subject), demonstrating the usual clinical and pathological features of the meningo-encephalitic disease caused by the fungus.

1631. Weiss (C.), Perry (Isabella H.), & Shevky (Marian C.). **Infection of the human eye with Cryptococcus neoformans (Torula histolytica; Cryptococcus hominis). A clinical and experimental study with a new diagnostic method.**—*Arch. Ophthal., N.Y.*, 39, 6, pp. 739–751, 6 figs., 1948.

A case of infection of the right eye of a 56-year-old male Italian by *Cryptococcus neoformans*, which terminated fatally, is reported from San Francisco. The histological reactions of rabbits to intra-ocular injection of cultures of the fungus from the sclera are described in the hope that this new procedure may assist in an early diagnosis of the disease, which in most cases of human infection is not made until an advanced stage is reached or after death. The present instance of ocular infection by *C. neoformans* is stated to be the second on record.

1632. Gurri (J.). **Reconocimiento de Tórula histolítica (Torulopsis neoformans) en los cortes histológicos.** [Recognition of *Torula histolytica* (*Torulopsis neoformans*) in histological sections.]—*An. Fac. Med. Montevideo*, 35, 1, pp. 1–8, 10 figs., 1950. [English summary.]

The application of mucicarmin to sections of tissues from experimentally infected mice facilitated the recognition of *Torulopsis* [*Cryptococcus*] *neoformans*. The presence in the capsule of the fungus of a substance resembling mucoitin sulphuric acid is believed to be responsible for a metachromatic reaction with toluidin blue.

1633. Neill (J. M.) & Kapros (C. E.). **Serological tests on soluble antigens from Mice infected with Cryptococcus neoformans and Sporotrichum schencki.**—*Proc. Soc. exp. Biol., N.Y.*, 73, 4, pp. 557–559, 1950.

The results of experiments at Cornell University Medical College, New York City, demonstrated the occurrence of soluble antigens of the causal organisms in the tissues of mice infected with *Cryptococcus neoformans* and *Sporotrichum schencki*. The antigens were readily detected by tests with appropriate antisera of reasonably high potency. In the case of *C. neoformans*, soluble antigen was also found in the blood of infected mice.

1634. Mosberg (W. H.) & Arnold (J. G.). **Torulosis of the central nervous system : review of literature and report of five cases.**—*Ann. intern. Med.*, 32, 6, pp. 1153–1183, 1950.

Five cases of torulosis (*Cryptococcus neoformans*) of the central nervous system are reported in detail from the University of Maryland Hospital. One patient survived over three years after the onset of symptoms and no evidence of the disease was disclosed by the autopsy: in another moniliasis (*Monilia* [*Candida*] *albicans*) was associated with the torulosis. Including these five cases, the number reported to date is 172, which are here tabulated and analysed. No method of therapy has yet proved effective. Torulosis is liable to confusion with a number of other diseases, but the diagnosis will seldom be at fault if routine cultures are made on Sabouraud's agar and observed for a month.

1635. Howe (G. W.). **An atypical case of meningo-encephalitis due to Cryptococcus neoformans (Torula histolytica) : review of the literature.**—*Sth. med. J.*, 43, 7, pp. 649–651, 1950.

A clinically atypical case of meningo-encephalitis due to *Cryptococcus neoformans* in a 26-year-old male patient at the Southern Pacific Hospital, Houston, Texas, is reported, and the problems of diagnosis and treatment briefly discussed. The disease appears to be less rare than is commonly supposed. During the past 18 months there were two other proved cases at Houston.

1636. Gandy (W. M.). **Primary cutaneous cryptococcosis.**—*Arch. Derm. Syph., Chicago*, 62, 1, pp. 97–104, 5 figs., 1950.

The author received technical assistance from J. W. Brueck in the studies herein reported on a case of primary cutaneous facial cryptococcosis (*Cryptococcus neoformans*) in a 29-year-old female patient at the Charity Hospital Louisiana, New Orleans.

1637. Evans (E. E.). **The antigenic composition of Cryptococcus neoformans. I. A serologic classification by means of the capsular and agglutination reactions.** —*J. Immunol.*, 64, 5, pp. 423–430, 1950.

An effective method for the preparation of antisera against encapsulated strains of *Cryptococcus neoformans* is described. By means of the agglutination test, capsular reaction, and agglutinin absorption, 19 strains of the fungus have been divided into three serological types, designated A, B, and C. Judging by its reaction in antiserum the capsule is concerned in type specificity.

1638. Drouhet (E.) & Segretain (G.). **Biologie et pouvoir pathogène de Torulopsis neoformans (= Torula histolytica).** [Biology and pathogenicity of *Torulopsis neoformans* (= *Torula histolytica*).]—*Rev. Path. comp.*, 50, 614, pp. 37–44, 1950. [English summary.]

In morphological and physiological studies on a strain of *Torulopsis* [*Cryptococcus*] *neoformans* isolated from a fatal case of meningitis a mucoid variant with large capsulated cells was obtained from the initial smooth strain, not encapsulated in culture. The pathogenicity of the variant was much greater than that of the original organism. Histological studies on experimentally inoculated mice and guinea-pigs showed that the fungus develops in the lesions under the protection of considerable capsular material, with no cellular reaction, the host appearing to be without defence.

1639. Plaut (A.). **Human infection with Cryptococcus glabratus. Report of case involving uterus and fallopian tube.**—*Amer. J. clin. Path.*, 20, 4, pp. 377–380, 3 figs., 1950.

Cryptococcus glabratus, an ordinarily non-pathogenic species, was isolated in pure culture from granulomatous lesions of the cervix endometrium, and fallopian tube in a 31-year-old Chinese female at Topeka, Kansas.

1640. De Oliveira (E.). **Blastomicose do reto.** [Blastomycosis of the rectum.]—*Ann. paulist. Med. Cirurg.*, 59, 5, pp. 451–455, 2 figs., 1950.

Clinical details are given of two cases of rectal blastomycosis (*Paracoccidioides brasiliensis*) in male patients, aged 18 and 21, at the School of Medicine, São Paulo, Brazil.

1641. Mackinnon (J. E.) & Vinelli (H.). **Caracteres differenciales de Paracoccidioides brasiliensis y Blastomyces dermatitidis en los tejidos. Utilidad de la coloración con el carmín de Best.** [Differential characters of *Paracoccidioides brasiliensis* and *Blastomyces dermatitidis* in the tissues. Utility of Best's carmine stain.]—*An. Fac. Med. Montevideo*, 35, 2, pp. 299–310, 18 figs., 1950. [English summary.]

A comparative study of sections of tissues from cases of North and South American blastomycosis (*Blastomyces dermatitidis* and *Paracoccidioides brasiliensis*, respectively) led to the following conclusions. The very thin (not double-contoured) capsule of *P. brasiliensis* may be stained by haemotoxylin and Best's carmine in the adult cells. A clear space observed between the capsule and the cytoplasm [No. 1351] is believed to arise from the contraction of the cytoplasm through the agency of fixatives. On the other hand, the capsule of *B. dermatitidis* is thick and double-contoured. In one case only certain cells contained capsules that took the carmine stain, while in other material the inner outline of the capsule reacted positively to carmine and the outer to haematoxylin, the intervening space remaining uncoloured. As in *P. brasiliensis*, there may be a clear zone between the capsule and the cytoplasm.

Reports in the relevant literature as to the occurrence of *B. dermatitidis* in South America cannot be confirmed by the authors' observations.

1642. Mackinnon (J. E.). **Naturaliza o significado de la forma en 'ruedo de timón' de Paracoccidioides brasiliensis.** [Nature or significance of the 'steering-wheel' form in *Paracoccidioides brasiliensis*.]—*An. Fac. Med. Montevideo*, 35, 4, pp. 653–668, 18 figs., 1950. [English summary.]

From comparative studies on a species of *Mucor* isolated from ants' nests, and *Paracoccidioides brasiliensis*, in which Noemi García-Zorrón collaborated with the author, it is concluded that a budding process is the cause of the typical aspect of *P. brasiliensis* in the tissues or in cultures at 37° C. The data to hand do not support the theory of 'cryptosporulation', and the multiple buds cannot be regarded as conidia since they continue to grow and produce adult cells similar to the mother cell.

1643. Monteiro de Barros (O.). **Sur la maladie de Lutz, Splendore et Almeida.** [On the disease of Lutz, Splendore and Almeida.]—*Bull. Soc. Path. exot.*, 43, 1–2, pp. 114–120, 7 figs., 1950.

The author reports encouraging results in the therapy of paracoccidioidal granuloma (*Paracoccidioides brasiliensis*) in São Paulo, Brazil, by means of sulphadiazine. It may be replaced in cases of intolerance by a mixture of

equal parts of sulphamerazine, sulphathiazol, and sulphadiazine. The fungus may attack the bones exclusively, and the radiographic aspect of such lesions is similar to that of coccidioidomycosis (*Coccidioides immitis*).

1644. Bogliolo (L.). **South American blastomycosis (Lutz's disease) : a contribution to knowledge of its pathogenesis.**—*Arch. Derm. Syph., Chicago*, 61, 3, pp. 470–474, 2 figs., 1950.

Two further cases of South American blastomycosis are reported, in which the causal organism, *Paracoccidioides brasiliensis*, apparently gained ingress along the teeth or through the periodontal tissues [No. 729]. Both patients were males, 55 and 22 years old, and resident at Belo Horizonte, Brazil.

1645. Niño (F. L.). **Granuloma paracoccidioidico (forma linfático-tegumentaria curada con sulfadiazina).** [Paraccoccidioidal granuloma (lymphatico-tegumentary form cured by sulphadiazine).]—*Bol. Inst. Clin. quirúrg.*, 4, 3, pp. 114–127, 15 figs., 1948. [Abs. in *Dermatol. & Venereol.* (*Excerp. med.*, Sect. XIII), 4, 3, p. 100, 1950.]

The patient contracted paracoccidioidal granuloma [*Paracoccidioides brasiliensis*] during the manipulation of hides. Diagnosis was made by laboratory procedures and a cure was effected by means of sulphadiazine with sulphamerazine.

1646. Lacaz (C. da S.), Ashcar (H.), Costa (O.), & Viotti (M.).—**Ação da estreptomicina in vitro e in vivo sôbre o Paracoccidioides brasiliensis.** [Action of streptomycin *in vitro* and *in vivo* on *Paracoccidioides brasiliensis*.]—*Ann. paulist. Med. Cirurg.*, 57, 2, p. 118, 1949. [*B.A.*, 24, No. 6845 a.]

In vitro and *in vivo* tests indicated that streptomycin controls blastomycoses due to *Paracoccidioides brasiliensis*.

1647. Ritter (F. H.). **Tumor cerebral granulomatoso por paracoccidióide a propósito de dois casos operados.** [Granulomatous brain tumour caused by *Paracoccidioides* in relation to two cases operated on.]—*Arq. Neuro-Psiquiat., S. Paulo*, 6, 4, pp. 352–359, 1948. [English summary: *T.D.B.*, 46, 1081.]

An account is given of two cases of granulomatous cerebral tumour (one of the cerebral hemisphere, the other from the cerebellum) operated on and found to be due to *Paracoccidioides brasiliensis*.

1648. De Azevedo (A. P.). **Lesões do sistema nervoso central na doença de Lutz (blastomicose brasileira).** [Lesions of the central nervous system in Lutz's disease (Brazilian blastomycosis)].—*Hospital, Rio de J.*, 36, 4, pp. 465–487, 1949. [English summary. *T.D.B.*, 47, 402.]

Detailed clinical and pathological descriptions are given of three cases of generalized Brazilian blastomycosis (*Paracoccidioides brasiliensis*) in which autopsies between the years 1928 and 1931 showed intracranial disease; two were the first cases reported in which the brain tissue was involved.

1649. Weiss (P.) & Flores (L. O.). **Nuevos casos de linfo-granulomatosis micosica encontrados en Lima.** [New cases of mycotic lympho-granulomatosis encountered in Lima.]—*Rev. Méd. exptl* [*Lima*], 7, 1–4, pp. 1–9, 1948. [*B.A.*, 23, No. 29621.]

Examination of the pus from an ulcerated gland in a female patient with generalized glandular enlargement of one year's duration showed the presence of the organism causing Brazilian blastomycosis (*Paracoccidioides* [*brasiliensis*]). This was the fourth case observed by the writers.

1650. De Almeida (F.). **Consideracões em torno do género Phialoconidiophora.** [Considerations on the genus *Phialoconidiophora*.]—*Ann. Fac. Med. S. Paulo*, 17, pp. 533–545, 1941. [*B.A.*, 24, No. 6827.]

The data leading to the erection of the genus *Phialoconidiophora* as the agent of chromomycosis in Brazil are reviewed. Three different types of conidiophore are present, and the separation of this genus from *Hormodendrum* is maintained.

1651. Silva (Margarita). **Influence of culture media on sporulation and growth of various fungus isolates from chromoblastomycosis.**—Abs. in *Amer. J. Bot.*, 10, p. 815, 1949.

The growth and sporulation of a group of 19 isolates representing *Phialophora verrucosa*, *Fonsecaea compactum* [*P. compacta*], and the four varieties of *F.* [*P.*] *pedrosoi* were studied on various media. Czapek-Dox agar stimulated the production of the *Hormodendrum* type of conidiophores and maize meal infusion agar the *Fonsecaea* (pseudo-*Acrotheca*) type.

1652. De Almeida (F.) & Lacaz (C. da S.). **Estudo micológico de um cogumelo do género Hormodendrum isolado de acromia parasitaria.** [Mycological study of a fungus of the genus *Hormodendrum* isolated from parasitic achromia.]—*Ann. Fac. Med. S. Paulo*, 16, pp. 221–233, 1940. [*B.A.*, 24, No. 6830.]

A detailed description is given of a species of *Hormodendrum*, perhaps new to science, isolated from the first case of Jeanselme's parasitic achromia observed in São Paulo.

1653. Berger (L.) & Langeron (M.). **Sur un type nouveau de chromomycose observé au Canada (Torula bergeri n.sp.).** [On a new type of chromomycosis observed in Canada (*Torula bergeri* n.sp.)]—*Ann. Parasit. hum. comp.*, 24, 5–6, pp. 574–599, 11 pl., 1949.

A mycological study of the fungus responsible for the first case of chromoblastomycosis recorded in Canada [Nos. 492, 493] showed it to be one of the black yeasts. In culture it gave rise to *Fumago* forms identical with those present in the lesions, and these *Fumago* forms produced in culture the yeast-like phase, which in time disappeared, the colonies losing their moist, shiny appearance and developing an irregular, granulose surface consisting of thick, black dust. The name *Torula bergeri* n.sp. is suggested.

1654. Negroni (P.). **Estudios sobre el Coccidioides immitis Rixford Gilchrist. XIII. Estudio citológico.** [Studies on *Coccidioides immitis* Rixford Gilchrist. XIII. Cytological study.]—*An. Soc. cient. argent.*, 148, 6, pp. 333–342, 4 figs., 1949. [French and English summaries.]

Cytological features of *Coccidioides immitis* in culture include vacuomes, reserves of glycogen and fats, and thread-like chondriosomes. The lateral walls and septa of the mycelium comprise zones staining red in response to the application of ruthenium red. The cell contents, notably the fats, migrate into the uninucleate 'entospores', which on maturity stain uniformly red with Sudan III. The cells of the vegetative mycelium contain several nuclei which divide by amitosis. In the parasitic phase the membrane of *C. immitis* seems to oppose a barrier to aqueous dyes. The fats stain red and the membrane a rather deep blue with Guéguen's reagent. The radiate or clavate elements are acido- and partially siderophilic.

1655. Rosenthal (S. R.). **Contagiousness of coccidioidomycosis.**—Abs. in *Fed. Proc.*, 8, 1, p. 367, 1949.

The following evidence is offered for the contagiousness of coccidioidomycosis (*Coccidioides immitis*) on the basis of experiments conducted at the College of Medicine, Chicago, in three phases of the disease. (1) Spherule-containing exudates from humans or guinea-pigs, instilled into the trachea of the latter, resulted in a primary form of the disease very similar to that occurring in man. (2) Spherule-containing exudates of humans, kept in the refrigerator for periods up to 110 days, failed to produce hyphae and chlamydospores but retained their spherule forms, which were pathogenic to guinea-pigs. Spherule-containing sputa exposed out-of-doors to the shade or sun with or without earth for periods up to 230 days [No. 1656] retained their spherule forms, though mycelia were produced in a proportion of the samples. (3) In a limited number of cases healthy guinea-pigs placed in the same cages with animals infected intratracheally with the spherules of the fungus contracted the disease.

1656. Rosenthal (S. R.) & Elmore (F. H.). **Studies on the contagiousness of coccidioidomycosis. II. The fate of spherules in sputum, exposed out of doors. III. Infection in Guinea Pigs by contact with diseased animals.**—*Amer. Rev. Tuberc.*, 61, 1, pp. 95–115, 8 figs., 1950. [Spanish summaries.]

The results of preliminary studies indicate that the vegetative form of *Coccidioides immitis* develops out-of-doors, especially in earth exposed to the sun and in material without soil kept in the shade. Spherules were observed most frequently in sputum samples kept in the shade without earth and were rare in specimens exposed in the sun, with or without soil. The vegetative form was seldom detected after 30 days, whereas the parasitic or spherule phase was evident up to 240 days of exposure. The viability of the spherules was of a very low order under the experimental conditions [cf. No. 1151].

Normal guinea-pigs housed with others suffering from pulmonary coccidioidomycosis may develop gross pulmonary lesions or other signs of infection. In these experiments 10 out of 13 healthy animals, housed in four separate cages with infected ones, presented evidence of coccidioidomycosis after 46 to 175 days of contact, as determined by positive skin tests, pulmonary lesions, or spherules seen on direct mounts of these lesions.

1657. Greer (S. J.), Forsee (J. H.), & Mahon (H. W.). **The surgical management of pulmonary coccidioidomycosis in focalized lesions.**—*J. thorac. Surg.*, 18, 5, pp. 591–604, 9 figs., 1949.

At the Fitzsimons General Hospital, Denver, Colorado, four patients with focalized granulomatous lesions of coccidioidomycosis (*Coccidioides immitis*) were successfully treated by wedge resection of the diseased portion of the lung [see next entry]. The removal of such lesions is advisable to free the patient of a potential source of dissemination and to exclude the possibility of a more malignant process which might present an identical roentgenological appearance.

Coccidioidal cavities were removed by lobectomy in nine cases. This operation should be reserved for patients having distressing symptoms over protracted periods.

1658. Weisel (W.) & Owen (G. C.). **Pulmonary resection for coccidioidomycosis. Report of a case.**—*J. thorac. Surg.*, 18, 5, pp. 674–678, 2 figs., 1949.

Full particulars are given of the clinical course of a case of cavitary coccidioidomycosis (*Coccidioides immitis*) in a 26-year-old male patient at the Veterans

Administration Hospital, Wood, Wisconsin, and of the successful resection of the right upper lobe [see preceding entry]. Interesting features of the case were the persistence and progression of the cavity five years after the onset of the disease and the presence of the fungus on the wall of the cavity. Cultures of this material yielded typical colonies of *C. immitis*.

In the commonly occurring spherule form, coccidioidomycosis is reputed to be non-contagious, but the detection of mycelia in the authors' case raises the possibility of infectiousness in patients with long-standing, progressive cavities and further justifies surgical extirpation of the diseased portion of the lobe.

1659. Norman (I. L.) & Lawler (A. L.). **Coccidioidomycosis: review of the literature and report of nine cases.**—*U.S. nav. med. Bull.*, 49, 6, pp. 1005–1020, 9 figs., 1949.

Fourteen contributions to the literature on coccidioidomycosis (*Coccidioides immitis*) are reviewed under the headings of etiology and epidemiology, types of infection, clinical manifestations, disseminated coccidioidomycosis, skin test, precipitin, and complement fixation tests, skin manifestations, and diagnosis. Nine cases occurring among patients at the U.S. Naval Hospital, San Diego, California, during the last two years are described, including two fatal ones of the disseminated type, with autopsy reports.

1660. Looney (J. M.) & Stein (T.). **Coccidioidomycosis. The hazard involved in diagnostic procedures.**—*New Engl. J. Med.*, 242, 3, pp. 77–82, 6 figs., 1950.

A review of the literature (11 papers) relating to 33 accidental infections (one fatal) caused by the handling of cultures of *Coccidioides immitis* in the laboratory is followed by a report on a case of disseminated infection contracted from this source by a 28-year-old negro technician at the Veterans Administration Hospital, West Roxbury, Massachusetts. The dangers of handling cultures of the fungus and the precautions to be observed are emphasized.

1661. Haupt (E.). **Über das klinische Bild einer Infektion mit dem Oomyceten Coccidioides immitis.** [On the clinical picture of an infection with the Oomycete *Coccidioides immitis*.]—*Klin. Wschr.*, 27, 33–34, pp. 570–571, 1949.

A fatal case of coccidioidomycosis (*Coccidioides immitis*), involving the lungs and meninges, is reported from the Municipal Hospital, Weimar. The 32-year-old patient had been a prisoner of war in Texas from 1943 to 1946. The symptoms were noticed in the summer of 1945 and death occurred on 6th June, 1948.

1662. Lack (A.). **Prodigiosin. I. Antibiotic action on Coccidioides immitis in vitro.**—*Proc. Soc. exp. Biol., N.Y.*, 72, 3, pp. 656–658, 1949.

Prodigiosin, a water-soluble, thermostable, red pigment produced by *Serratia marcescens* on thick mannite agar plates at pH 5, was fungistatic to cultures of *Coccidioides immitis* in dilutions up to and including 1 in 500,000, and fungicidal after 48 hours' exposure at 1 in 100,000.

1663. Quick (D. W.), Bradfield (J. Y.), & Mitz (R.). **Coccidioidomycosis: report of a case with unusual complications.**—*Tex. St. J. Med.*, 45, 10, pp. 706–709, 1 fig., 1949.

The clinical course and post-mortem findings in a case of disseminated coccidioidomycosis (*Coccidioides immitis*) in a 29-year-old male negro patient at the John Sealy Hospital, Galveston, Texas, are described. The fungus produced an extradural abscess, resulting in spinal cord compression and consequent paraplegia, a rare complication of which there appears to be only one previous report (*Ann. intern. Med.*, 23, pp. 240–249, 1945).

1664. Kirshbaum (J. D.). **Disseminated coccidioidomycosis with severe cutaneous manifestations.**—*Ill. med. J.*, 97, 3, pp. 157–160, 4 figs., 1950.

A fatal case of disseminated coccidioidomycosis (*Coccidioides immitis*) with exceptionally severe skin manifestations in a 31-year-old coloured male is reported from the Kern General Hospital, California. Mortality from this disease is stated to be heavier among dark- than in fair-skinned people (76 per cent.).

1665. Buss (W. C.), Gibson (T. E.), & Gifford (Myrnie A.). **Coccidioidomycosis of the meninges.**—*Calif. Med.*, 72, 3, pp. 167–169, 1950.

In a review of 53 cases of coccidioidal meningitis (*Coccidioides immitis*) in California, 50 of which were fatal, certain symptoms were found to be sufficiently common to facilitate diagnosis. Laboratory studies of spinal fluid also yielded helpful information. Particularly noteworthy in relation to roentgenologic studies was the fact that in no case in which there was pulmonary cavity formation due to *C. immitis* did coccidioidal meningitis develop.

1666. Burke (R[uth] C.). **Coccidioidomycosis.**—*Trans. N.Y. Acad. Sci.*, Ser. II, 12, 6, pp. 188–194, 1950.

Following some introductory observations on the history, symptomatology, and mycology of *Coccidioides immitis*, the writer describes the results of inoculating fertile chick eggs with the fungus. The value of this method for the procurement of large numbers of sporangia is indicated by the massive resultant infections and by the large size (up to 240 μ compared with a general maximum of 80 μ in human tissue) and rapid reproduction of the organs. Sporangia are distributed throughout the egg and showed a remarkable variety of shapes as well as various 'abnormalities', including pseudopod-like structures and other extrusions, heavy cross walls, and incompletely separated spherules. Variability in staining reaction was another striking feature of the chick sporangia, Mallory's triple stain imparting either a brown, blue, yellow, orange, or red coloration.

1667. Karn (M.). **Primary coccidioidomycosis and concomitant tuberculosis.**—*Amer. Rev. Tuberc.*, 61, 6, pp. 888–891, 2 figs., 1 graph, 1950.

A case of primary coccidioidomycosis (*Coccidioides immitis*), with coexistent primary tuberculosis, in a 52-year-old male Filipino patient is reported from the Veterans Hospital, Livermore, California. The difficulties of evaluating the respective parts played by the two diseases in the production of the clinical symptoms and roentgenographic abnormalities are discussed.

1668. Bass (H. E.). **Recent advances in knowledge of fungous diseases of the lungs with special reference to coccidioidomycosis and histoplasmosis.**—*J. Amer. med. Ass.*, 143, 12, pp. 1041–1044, 1950.

Recent progress in the knowledge of the pulmonary infections caused by *Coccidioides immitis* and *Histoplasma capsulatum* is reviewed in the light of 27 contributions to the relevant literature. Taken together, the endemic area for these pathogens covers a large section of the United States. Primary infections by these or other fungal agents of lung disease should be considered in the differential diagnosis of atypical pneumonias or unexplained pulmonary filtrates.

1669. Winer (L. H.). **Histopathology of the nodose lesion of acute coccidioidomycosis.**—*Arch. Derm. Syph., Chicago,* 61, 6, pp. 1010–1024, 10 figs., 1950.

A review of the literature on the nodose lesion in acute coccidioidomycosis (*Coccidioides immitis*) is followed by a report on the microscopic study of the erythema nodosum type of infection in nine adult patients in Californian hospitals (seven women and two men). The nodose lesion is an immunity-producing reaction, indicative of a favourable prognosis.

1670. Gómez (R.). **Investigaciones sobre la endemia de coccidioidomicosis en la zona central del Chaco paraguayo. Sus primeros resultados.** [Investigations on the endemiology of coccidioidomycosis in the central zone of the Paraguayan Chaco. Their preliminary results.]—*An. Fac. Méd. Montevideo,* 35, 4, pp. 639–652, 1 graph, 1 map, 1950.

Studies on the endemiology of coccidioidomycosis (*Coccidioides immitis*) among the 82 Indian aborigines and 209 Paraguayan personnel of the Union Oil Paraguay Company in the central zone of the Paraguayan Chaco, a dry, torrid, windy, and dusty region abounding in animal life, revealed 43·9 per cent. positive responses to the skin test in the former group and 15·5 per cent. in the latter. Two cases of primary coccidioidomycosis were definitely and three presumptively identified among the Paraguayans. It is concluded from these data that the area under observation should be classed as endemic.

1671. Ginés (A. R.), Gould (E.), & Melgarejo de Talavera (María S.). **Intradermoreacción con coccidioidina. Contribución al estudio de la coccidioidomicosis en el Paraguay.** [Intradermal reaction with coccidioidin. Contribution to the study of coccidioidomycosis in Paraguay.]—*Hoja tisiol.,* 9, 3, pp. 255–260, 1949. [*T.D.B.*, 47, 400.]

Of 1,591 healthy persons 2 to 70 years old in Asunción, Paraguay, tested with 1 in 1,000 coccidioidin, 0·25 per cent. gave doubtful reactions, 2 per cent. positive with diameter of induration 5 to 9 mm., and 0·06 per cent. positive, 10 to 19 mm. Calcification was present in 5·4 per cent., adenopathy in 0·63 per cent., and pulmonary lesions in 1·73 per cent. In the remaining tests a dilution of 1 in 100 was used. In these, 356 healthy persons gave 0·56 per cent. doubtful reactors, 0·52 per cent. positive (5 to 9 mm.), and 0·28 per cent. positive (10 to 19 mm.). The largest reaction was 13 mm. Of 70 persons suffering from American dermal leishmaniasis 4 per cent. gave reactions of 5 mm.; calcifications were present in 17 per cent., adenopathy in 4·2 per cent., and pulmonary lesions in 1·04 per cent. Of 106 subjects of pulmonary tuberculosis only one reacted. It is concluded that the presence of indigenous coccidioidomycosis [*Coccidioides immitis*] in Asunción has not been proved.

1672. Craig (W. McK.) & Gates (E. M.). **Metastatic mycotic abscesses of the brain.**—*Arch. Neurol. Psychiat.,* 62, 3, pp. 314–321, 1949.

During a 31-year period (1915 to the end of 1945), the lesions of 104 patients with metastatic brain abscesses were studied at autopsy at the Mayo Clinic, Rochester, Minnesota. Only five yielded fungi, namely, *Candida albicans* (1), *Coccidioides immitis* (2), and *Actinomyces* (2). Two cases are reported in detail, one each of *Candida albicans* and *Coccidioides immitis*, both in males, 43 and 49 years old, respectively.

1673. Erickson (A. B.). **The fungus (Haplosporangium parvum) in the lungs of the Beaver (Castor canadensis.)**—*J. Wildlife Mgmt,* 13, 4, pp. 419–420, 1949. [*B.A.*, 24, No. 6840.]

The lungs of a beaver were spotted with thousands of white nodules caused by a fungus closely resembling *Haplosporangium parvum* [No. 920]. The cyst

wall surrounding the chlamydospores consisted of two layers, the inner 0·21 mm. thick and composed largely of fibrous connective tissue, the outer 0·5 mm. thick and made up of polymorphonuclear leucocytes and lymphocytes and some connective tissue. The chlamydospores measured 209 μ in diameter. After the death of an infected animal, the chlamydospores germinate in the soil and the saprophytic stage begins. Owing partly to the large size of the fungus, extensive tissue reaction occurs in the host.

1674. Kneidel (J. H.) & Segall (H.). **Acute disseminated histoplasmosis.**—*Pediatrics*, 4, 5, pp. 596–603, 7 figs., 1949. [Spanish summary.]

Three cases of proved histoplasmosis (*Histoplasma capsulatum*), one in a three-year-old girl and two in female infants of eight and nine months, are reported from the Indianapolis (Indiana) General Hospital. The mode of onset, clinical symptomatology, and laboratory and roentgenographic data are presented in detail. All three patients succumbed to the disease, for which there is as yet no effective fungicide available.

1675. Friedman (Valerie), Brown (J. E.), & Turner (E. V.). **A case of proven systemic histoplasmosis with apparent recovery.**—*Ohio St. J. Med.*, 46, 1, pp. 44–45, 1950.

Full clinical details are given of a case of benign generalized histoplasmosis (*Histoplasma capsulatum*) in an eight-year-old boy at the Children's Hospital, Columbus, Ohio [see next abstract].

1676. Wheeler (W. E.), Friedman (Valerie), & Saslaw (S.). **Simultaneous nonfatal systemic histoplasmosis in two cousins.**—*Amer. J. Dis. Child.*, 79, 5, pp. 806–819, 4 figs., 2 diags., 3 graphs, 1950.

Two cases of benign systemic histoplasmosis (*Histoplasma capsulatum*) are fully described and discussed, one in an eight-year-old boy [see preceding abstract] and the other in his 5½-year-old cousin, both patients at the Children's Hospital, Columbus, Ohio. Therapy consisted essentially of rest in bed and a diet similar to that given to patients with tuberculosis. The authors are of opinion that none of the drugs administered (streptomycin, sulphadiazine, and penicillin) contributed materially to the boy's recovery.

1677. Sexton (R. L.), Ewan (J. R.), & Payne (R. C.). **Determination of the specificity of histoplasmin and coccidioidin as tested on 356 Aleuts of the Pribilof Islands.**—*J. Allergy*, 20, 2, pp. 133–135, 1949.

During the summer of 1946, 356 natives of the Pribilof Islands in the Bering Sea, 200 miles off the mainland of Alaska, and 18 white personnel were tested with tuberculin, coccidioidin [*Coccidioides immitis* antigen], and histoplasmin [*Histoplasma capsulatum* antigen]. Reactors to tuberculin, coccidioidin, and histoplasmin among the natives numbered 94, 0, and 1, respectively, and among the whites 14, 3, and 0, respectively.

1678. Whitcomb (Frances C.), Milzer (A.), & Kunstadter (R. H.). **Incidence of mycotic infections in children with respiratory diseases.**—*J. Pediat.*, 35, 6, pp. 715–722, 1949.

A survey to determine the incidence of mycotic infections in acute respiratory diseases was carried out on 211 patients at the Sarah Morris Hospital for Children, Chicago. Each child was skin-tested with histoplasmin, blastomycin, and coccidioidin (prepared from the mycelial phase of *Histoplasma capsulatum*, *Blastomyces dermatitidis*, and *Coccidioides immitis*, respectively),

torulin, and tuberculin. The results showed three proved cases of fungus infection, namely, (1) a primary histoplasmosis with clinical findings of atypical pneumonia from which *H. capsulatum* was isolated during the acute stage; (2) a fatal infection with granulomatous lesions of the lung, liver, and kidney yielding an unidentified fungus; and (3) *Candida albicans* infection of the lung associated with malnutrition. Two presumptive cases of geotrichosis are described.

Although no significant correlation was established between systemic mycotic infections and acute respiratory disease in the present enquiry, a fungus etiology should be considered in cases of atypical pneumonia, such as the one listed above as associated wth *H. capsulatum*.

1679. Ginés (A. R.), Gould (E.), & Melgarejo de Talavera (María S.). **Intradermoreacción con histoplasmina (contribución al estudio de la histoplasmosis en el Paraguay).** [Intradermoreaction with histoplasmin (a contribution to the study of histoplasmosis in Paraguay).]—*Hoja tisiol.*, 9, 4, pp. 354–363, 1949.

Judging by the frequency of positive reactions to histoplasmin (*Histoplasma capsulatum* antigen), which ranged from 18 to 31 per cent. in a series of tests on 1,965 apparently healthy persons at Asunción, Paraguay, the existence of the disease in the country is regarded as probable.

1680. Pratt (P. T.), Schwartz (S. O.), & Ehrlich (L.). **Aspiration biopsy of bone marrow as an aid in diagnosis of histoplasmosis : report of a case.**—*Arch. intern. Med.*, 85, 6, pp. 893–899, 3 figs., 1950.

A fatal case of histoplasmosis (*Histoplasma capsulatum*) in a 70-year-old male patient at the Cook County Hospital, Chicago, is described. The fungus was morphologically and culturally demonstrated during life in both the marrow and the blood. Aspiration biopsy of marrow promises to become an important aid to diagnosis in cases of suspected histoplasmosis.

1681. Kelly (Ruby G.). **Sensitivity to histoplasmin.**—*Amer. Rev. Tuberc.*, 61, 2, p. 269, 1950.

Sensitivity to histoplasmin [antigen from *Histoplasma capsulatum*] was tested in 471 patients in a Michigan sanatorium, using 0·1 ml. of a 1 in 1,000 dilution of lot H–15 from the Public Health Service. The number of positive reactors was 54 (11·5), of whom 10 (25 per cent. of the total) were born in Central Europe.

1682. Green (P.). **Pulmonary calcification and histoplasmin sensitivity.**—*Canad. med. Ass. J.*, 63, 2, pp. 143–146, 1 fig., 2 graphs, 1950.

In a group of 440 veterans in Manitoba, many of whom had travelled widely during war service, the incidence of positive skin reactions to 1 in 100 histoplasmin (*Histoplasma capsulatum* antigen) and 1 in 1,000 tuberculin was 5 and 59 per cent., respectively. The incidence of pulmonary calcification, as determined by X-ray of the chest, was 14 per cent. for the whole group. In those who did not react to either antigen in the dilutions tested, the incidence was 5 per cent., the corresponding figures for tuberculin-positive and histoplasmin-negative, histoplasmin-positive and tuberculin-negative, and positive to both being 15, 63, and 53 per cent., respectively. The significance of these findings is briefly discussed and a case history of presumed pulmonary histoplasmosis is presented.

1683. Palmer (C. E.) & Petersen (O. S.). **Studies of pulmonary findings and antigen sensitivity among student nurses. V. Doubtful reactions to tuberculin and to histoplasmin.**—*Publ. Hlth Rep., Wash.*, 65, 1, pp. 1–35, 11 graphs, 1950.

A statistical method has been developed as an approach to the interpretation of cutaneous tuberculin and histoplasmin (*Histoplasma capsulatum* antigen) reactions among student nurses in 11 cities of the United States. The hypothesis is proposed that positive and negative reactions are distributed over a continuous scale, the former tending to be at one end and the latter at the other, but with some overlapping in an intermediate zone of doubtful or questionable responses. This group is believed to comprise a mixture of erroneously classified true positive and true negative reactions. A simple mathematical formulation of the theory is applied to the extensive data available with illuminating results.

1684. Kunstadter (R. H.), Whitcomb (Frances C.), & Milzer (A.). **Primary histoplasmosis with recovery of Histoplasma capsulatum from the blood and bronchial secretions.**—*J. Lab. clin. Med.*, 34, 9, pp. 1290–1297, 7 figs., 1949. [*T.D.B.*, 47, 83.]

A case of primary histoplasmosis (*Histoplasma capsulatum*) in a 12-year-old coloured boy, with a clinical diagnosis of atypical pneumonia, is described from the Sarah Morris Hospital for Children, Chicago. The course of infection was followed from the onset through the stage of pulmonary infiltration to healing as manifested by incipient pulmonary calcification. The fungus was isolated from the blood and bronchial secretions obtained during the acute phase. The patient had a positive reaction to the complement fixation tests for histoplasmosis at the height of the pulmonary infiltration, which persisted until the beginning of calcification four months later. His reaction to the histoplasmin skin test was also positive. The benign form of the disease is discussed, with special reference to pulmonary infiltrations preceding calcification.

1685. Hazen (Elizabeth L.) & Tahler (E. D.). **Complement-fixation tests in histoplasmosis, blastomycosis, and coccidioidomycosis.**—*Rep. N.Y. St. Dep. Hlth, 1948*, pp. 79–81, 1 pl., [? 1949].

In complement-fixation studies at the New York Laboratory of the Division of Laboratories and Research, State Department of Health, antigens were prepared from the yeast-like and mycelial phases of *Histoplasma capsulatum* and *Blastomyces dermatitidis*. The immune sera were obtained by intravenous inoculation of rabbits and intraperitoneal injections of guinea-pigs with living cultures. Strong reactions occurred in the complement fixation test with homologous rabbit antisera and both cell antigen and cell extract used as antigen but further purification of the antigens is necessary. During the immunization of rabbits against *H. capsulatum* by intravenous inoculation of live yeast-phase cultures of the fungus severe reaction occurred; one was sacrificed and *H. capsulatum* was isolated from the spleen and liver. In two to three months the remainder appeared to recover completely.

1686. Marsiaj (N.), Guimarães (N.), Pedrosa Cunha (J.), & Oliveira Lima (A.). **Investigações preliminares sôbre a incidência de sensibilidade cutânea à histoplasmina no Brasil.** [Preliminary investigations on the incidence of cutaneous sensitivity to histoplasmin in Brazil.]—*Hospital, Rio de J.*, 36, 2, pp. 273–277, 1949. [*T.D.B.*, 47, 399.]

Of 495 apparently healthy persons (311 men and 184 women) from three areas of Brazil subjected to intradermal tests with histoplasmin [*Histoplasma*

capsulatum antigen], 47 (9·49 per cent.) reacted positively (37 men and 10 women); 14 (7 per cent. of the persons tested) occurring in Rio Grande do Sul, 11 (9·24 per cent.) in Bahia, and 22 (12·5 per cent.) in the Federal District. In Rio Grande do Sul the maximum incidence occurred between the ages of 20 and 29, in Bahia between 10 and 19, and in the Federal District 40 to 60.

1687. Saslaw (S.) & Campbell (Charlotte C.). **Studies on the stability of the histoplasmin collodion agglutination test.**—*J. Lab. clin. Med.*, 35, 5, pp. 780–785, 1950.

Further experimental data relating to the collodion agglutination test for histoplasmosis (*Histoplasma capsulatum*) are presented and discussed. They demonstrated the relative stability of the collodion particles, the simplicity and repeatability of the test, and the economy of materials. A comparison of three separate lots of collodion varying in age from three weeks to 14 months yielded similar results in the presence of positive and negative human and rabbit sera.

1688. Saslaw (S.) & Campbell (Charlotte C.). **Serologic studies in histoplasmosis.**—*Amer. J. publ. Hlth*, 40, 4, pp. 427–435, 1950.

From a critical survey of the relevant literature and the results of their own experiments at the Army Medical Department Research and Graduate School, Washington, D.C. [cf. preceding entry], the authors conclude that the potential value of serological studies in the laboratory diagnosis of histoplasmosis (*Histoplasma capsulatum*) has been substantiated.

1689. Titsworth (E. H.) & Grunberg (E.). **A medium for the growth and maintenance of the yeast-like phase of Histoplasma capsulatum.**—*Mycologia*, 42, 2, pp. 298–300, 1 fig., 1950.

The egg yolk-potato medium (K.T. Sasano & E. M. Medlar: *Amer. Rev. Tuberc.*, 48, pp. 297–303, 1943) is of value in obtaining the yeast-like phase of *Histoplasma capsulatum*. The formula for the potato base is: potato (peeled and ground) 200 gm., glycerol 60 ml., citric acid 0·2 gm., bactohaemoglobin 5 gm., and water 1,000 ml. These materials are autoclaved. The method of preparation of the egg yolk is described and 500 ml. each of the potato base and sterile egg yolk filtrate are mixed, 10 ml. of sterile 10 per cent. Congo red being added. The mixture is dispensed into sterile test tubes or Petri dishes, steamed for one hour, and incubated for sterility.

1690. Ranque (J.). **Influence de divers milieux de culture sur la morphologie et la virulence de Histoplasma capsulatum.** [Influence of various culture media on the morphology and virulence of *Histoplasma capsulatum*.]—*C. R. Soc. Biol., Paris*, 144, 7–8, pp. 558–560, 1950.

Of several nutrient media tested at the Faculty of Medicine and Pharmacy, Marseilles, all conducive to the growth of *Histoplasma capsulatum*, coagulated horse serum with the addition of 1 per cent. pancreatic peptone Codex No 1. produced the smoothest forms with the maximum pathogenicity to white mice.

1691. Seabury (J. H.). **Stilbamidine in the treatment of histoplasmosis : two case reports.**—*Ann. intern. Med.*, 31, 3, pp. 520–523, 1949.

Two cases of histoplasmosis (*Histoplasma capsulatum*) in males are reported from Michigan, one a 23-year-old negro and the other a 61-year-old white. The administration of stilbamidine to these patients resulted in a transient improvement but did not significantly modify the course of the disease, which presented several unusual features. Neither patient reacted to skin-test doses of mycelial histoplasmin, nor were their infections of a type liable to induce a state of anergy.

1692. Campbell (Charlotte C.) & Saslaw (S.). **Use of mucin in experimental infections of Mice with Histoplasma capsulatum.**—*Proc. Soc. exp. Biol., N.Y.*, 73, 3, pp. 469–472, 1950.

Histoplasma capsulatum in the yeast phase, suspended in 5 per cent. hog gastric mucin and administered intraperitoneally into white mice, caused a high percentage of fatal infections, which rarely resulted from equivalent challenge doses of the organism in saline suspensions. It was observed that by varying the number of organisms administered in mucin the mortality rate, as well as the time interval between injection and death, could be altered to suit experimental requirements. The relative resistance of white mice to *H. capsulatum* has hitherto limited the scope of certain studies on experimental histoplasmosis, which may now be extended by the use of mucin to enhance virulence.

1693. Howell (A.), Kipkie (G. F.), & Bruyere (P. T.). **Studies on experimental histoplasmosis. I. A report on intracerebral inoculations of male dba line 1 Mice.**—*Publ. Hlth Rep., Wash.*, 65, 22, pp. 722–735, 1950.

From this fully tabulated survey and discussion of the results of intracerebral inoculation experiments on four- to five-week-old male mice of the dilute brown strain (dba line 1), these animals appear to be suitable for the laboratory study of *Histoplasma capsulatum*. Given sufficient doses (upwards of 20,000 organisms), they proved uniformly susceptible to the pathogen, and the time of survival can be regulated by the dosage.

1694. Menges (R. W.), Furcolow (M. L.), & Ruhe (J. S.). **Experimental histoplasmosis in a Dog. A nonfatal case.**—*Publ. Hlth Rep., Wash.*, 65, 19, pp. 628–631, 2 graphs, 1950.

A case of experimental histoplasmosis (*Histoplasma capsulatum*) in a one-year-old terrier dog is reported from Kansas, in which definite resistance to infection was demonstrated. The fungus could not be isolated at the autopsy (16 months after inoculation) from any of the organs or tissues, and had presumably been destroyed.

1695. Prior (J. A.), Cole (C. R.), & Torbet (Virginia). **An evaluation of the histoplasmin reaction in the detection of naturally occurring histoplasmosis in Dogs.**—*Publ. Hlth Rep., Wash.*, 64, 48, pp. 1562–1565, 1949.

Of 837 dogs tested with histoplasmin (*Histoplasma capsulatum* antigen) at the College of Veterinary Medicine, Columbus, Ohio, only 5 (0·59 per cent.) reacted, of which three were proved to have active spontaneous histoplasmosis. The presence of other pathogens could not be demonstrated. One dog (not included in the foregoing tests), which was suffering from an acute form of the disease, diagnosed by blood culture and confirmed at autopsy by recovery of a pure culture of the fungus from liver, spleen, lymph nodes, lung, and ascitic fluid, failed to react to histoplasmin on two occasions a fortnight apart.

1696. Cole (C. R.), Prior (J. A.), & Saslaw (S.). **Detection of canine histoplasmosis by intradermal histoplasmin test.**—*J. Amer. vet. med. Ass.*, 116, 875, pp. 135–138, 2 figs., 1950.

At the College of Veterinary Medicine, Ohio State University, Columbus, active, naturally occurring canine histoplasmosis (*Histoplasma capsulatum*) has been detected by the intradermal histoplasmin test, to which seven dogs out of 1,314 reacted positively (0·53 per cent.). In four of these seven cases the presence of clinically active histoplasmosis was established either by culture or

microscopic demonstration of the fungus in the tissues, or by both methods. Five further cases of the disease are reported, one of which, at an advanced stage of infection, failed to respond to histoplasmin; accounts of four of these have already been published. A dilution of 1 in 100 of histoplasmin H–42 appeared to induce an appropriate skin reaction.

1697. Mosier (J. E.), Barner (R. D.), & Davis (J. C.). **Histoplasmosis in Dogs.**—*J. Amer. vet. med. Ass.*, 116, 875, pp. 128–151, 4 figs., 1950.

From studies in Kansas on five cases of canine histoplasmosis (*Histoplasma capsulatum*), the authors conclude that (1) the disease is highly lethal; (2) two distinct syndromes may occur, mesenteric and systemic; (3) demonstration of the pathogen in the affected tissues is the only positive diagnosis; (4) the lesions found on autopsy are fairly typical but must be differentiated from those of tuberculosis, leuchaemia, toxoplasmosis, and malignant neoplasms; and therapy is unsuccessful.

1698. Emmons (C. W.). **Histoplasmosis : animal reservoirs and other sources in nature of the pathogenic fungus, Histoplasma.**—*Amer. J. publ. Hlth*, 40, 4, pp. 436–440, 1950.

At the Laboratory of Infectious Diseases, National Institutes of Health, Bethesda, Maryland, *Histoplasma capsulatum* has been isolated in culture from 5 dogs, 1 house mouse, 47 brown and 4 roof rats, 19 domestic cats, 7 spotted skunks, and 1 opossum (*Didelphis virginiana*), reported for the first time as a host, from Virginia and Georgia, as well as from six soil samples collected on farms where rats with naturally acquired histoplasmosis had been captured previously. The significance of these observations is not fully apparent, but the examination of rats and cats by preparation of cultures is recommended as a method of determining the geographical distribution of the disease.

1699. Akün (R. S.). **Histoplasmosis in a Cat.**—*J. Amer. vet. med. Ass.*, 117, 880, pp. 43–44, 1 fig., 1950.

One human case of histoplasmosis (*Histoplasma capsulatum*) was recorded in Turkey in 1945, and the author here describes the accidental discovery of the fungus, during a routine autopsy at the Military Veterinary Academy, Ankara, in the lungs of a cat.

1700. Bullen (J. J.). **The yeast-like form of Cryptococcus farciminosus (Rivolta) : (Histoplasma farciminosum.)**—*J. Path. Bact.*, 61, 1, pp. 117–120, 1949. [*B.A.*, 24, No. 4556.]

The yeast-like phase of *Histoplasma farciminosum* was obtained on blood agar incubated at 37° C. in an atmosphere of 15 to 30 per cent. carbon dioxide. The yeast-like phase of three strains of *H. capsulatum*, two of *Blastomyces dermatitidis*, and one of *Sporotrichum schencki* were obtained on a simple peptone medium incubated at 32° in an atmosphere of 15 per cent. carbon dioxide.

1701. Marwin (R. M.). **Relative incidence of Candida albicans on the skins of persons with and without skin diseases.**—*J. invest. Derm.*, 12, 4, pp. 229–241, 1949.

At the University of Minnesota Medical School, Minneapolis, a survey was undertaken to determine the presence or absence of *Candida albicans* on the skin of 309 persons, of whom 109 presented various cutaneous abnormalities, but not diagnosed moniliasis. The fungus was isolated from seven of the 'pathological' subjects (6·4 per cent.) and one in the normal group (1·5 per cent.).

1702. Vilanova (Y.), Casanovas (M.), & Puig Muset (P.). **Investigaciones in vitro y clínicas sobre la acción del gamma-hexano frente a los hongos lévuriformes productores de procesos dermatológicos. Interpretación de su mecanismo de acción. VII. Nota sobre fungistasis.** [Laboratory and clinical studies on the action of gammahexane on the yeast-like fungi causing cutaneous diseases. Interpretation of its mechanism of action. VII. Note on fungistasis.]—*Act. dermo-sif., Madr.*, 40, 6, pp. 597–607, 1949. [English summary.]

Gamma-hexane was shown in *in vitro* tests at the Clinic of Dermatology, Barcelona, to be fungistatic to a pathogenic yeast, *Candida* 103 VC, at dilutions of up to 1 in 2,000, inclusive. To verify the assumption of an anti-inositol factor in gamma-hexane as an explanation of its toxicity to yeasts, tests were performed adding hexoses and pentoses to a Raulin's mineral nutrient base. Growth was inhibited with gamma-hexane dilutions up to 1 in 2,000 in tubes containing glucose, laevulose, and galactose, and up to 1 in 4,000 in those supplied with arabinose and mannite. These data, while not absolutely conclusive, suggest that the anti-yeast property of gamma-hexane is related to the anti-metabolite group.

The results of clinical assays with a gamma-hexane ointment in the treatment of epidermal lesions caused by the same yeast were encouraging.

1703. Ephraim (H.). **Moniliasis generalisata.** [Generalized moniliasis.]—*Acta med. orient.*, 8, 7–8, pp. 121–122, 1949.

Oidium [*Candida*] *albicans* was isolated from the primary lesions on the nails and secondary ones on the tongue and other sites in a 50-year-old male whose hands were continuously exposed to moisture in a restaurant bar at Haifa, Israel. Local treatment with intertrigan, containing gentian violet, gave satisfactory results.

1704. Hauser (F. V.) & Rothman (S.). **Monilial granuloma : report of a case and review of the literature.**—*Arch. Derm. Syph., Chicago*, 61, 2, pp. 297–310, 6 figs., 1950.

A case of monilial granuloma (*Candida albicans*), involving the scalp, face, buccal cavity, and hands of a seven-year-old boy is reported from the Department of Medicine, University of Chicago, and 13 similar records in the pertinent literature are reviewed. The development of this rare clinical entity is attributed to a lowered resistance of the patients to the invasion of the fungus.

1705. Dietrichson (Edel). **Étude d'une collection norvégienne de levures isolées d'expectorations de malades atteints d'asthme ou de bronchite (suite et fin).** [Study of a Norwegian collection of yeasts isolated from sputum of patients suffering from asthma or bronchitis (continuation and conclusion)].—*Ann. Parasit. hum. comp.*, 25, 3, pp. 200–220, 1950.

Notes are given on species of *Candida* isolated from sputum in Norway, including *C. albicans*, *C. triadis*, *C. tropicalis*, *C. pseudotropicalis*, *C. guilliermondi*, *C. krusei*, *C. parakrusei*, *C. aldoi*, *C. brumpti*, *C. zeylanoides*, and *C. macedoniensis* from asthma patients, and *C. albicans*, *C. triadis*, *C. tropicalis*, and *C. krusei* from others with pulmonary tuberculosis.

1706. Negroni (P.) & Daglio (C. A. N.). **Hongos blastosporados de los esputos.** [Blastosporous fungi from sputa.]—*Rev. Inst. bact., B. Aires*, 14, 1, pp. 79–82, 1949. [Abs. in *Med. Microbiol. Hyg.* (*Excerp. méd.*, Sect. IV), 3, 8, p. 872, 1950.]

Over 100 sputa were studied at the Carlo Malbran Bacteriological Institute, Buenos Aires, Argentina, of which 84 per cent. yielded strains of *Candida* and

15 per cent. *Cryptococcus*. The following species of *Candida* were identified from 54 strains: *C. albicans* 31 (57·4 per cent.), *C. tropicalis* 11 (20·37), *C. krusei* 7 (12·96); *C. parapsilosis* 2 (3·7), and one each of *C. guilliermondi*, *C. zeylanoides*, and *C. lipolytica*.

1707. De Carvalho (R.). **Un caso de moniliose difusa osteolítica.** [A case of diffuse osteolytic moniliasis.]—*Jorn. Farm., Lisboa*, 8, 67, pp. 36–37, 1949. [Abs. in *Intern. Med.* (*Excerp. méd.*, Sect. VI), p. 363, 1950.]

A case of infection of three years' standing by *Monilia pinoyi* [*Candida albicans*] is described. The symptoms were the delayed appearance of bronchitis, blood in the sputum, and pulmonary opacity. The fungus, detected in the sputum, was shown by radiographs made at intervals to be of high osteolytic potency.

1708. Hamil (B. M.). **Bronchopulmonary mycosis: simultaneous primary occurrence in four children and their mother with subsequent healing by diffuse miliary calcification; a twelve-year observation.**—*Amer. J. Dis. Child.*, 79, 2, pp. 233–271, 8 figs., 1950.

A full account is given of five cases of broncho-pulmonary mycosis (*Candida pinoyi* [*C. albicans*] and *Aspergillus niger*) in a 55-year-old mother and her four children resident on a farm in Michigan. The symptoms were characteristic of influenza and the illness was diagnosed accordingly. The fungi probably gained entry to the respiratory tracts from a common source in nature (grain and hay dust and contaminated chicken feathers) and became pathogenic as a result of the conditioning malady.

At the Henry Ford Hospital, Detroit, the children were treated with massive doses of iodides, which resulted in progressive healing through fibrosis to scattered, complete, dense miliary calcification.

1709. Brea (M. M.), Roger (V. N.), & Gilardon (A.). **Quistes pulmonares con contenido micótico.** [Pulmonary cysts with a mycotic content.]—*Rev. Asoc. méd. argent.*, 64, 677–678, pp. 207–210, 15 figs., 1950.

Full particulars are given of two cases of pulmonary cysts, both in female patients, one aged 24 and the other 43, at the Hospital de Clínicas, Buenos Aires. The examination of material fixed in formol revealed the presence of fungal mycelia, the identity of which could not be established owing to the impracticability of isolation in pure culture. They were, however, believed to be of etiological significance. A cure was effected in both cases by pulmonary resection (lobectomy).

1710. Labatut Diaz (G.). **Estudio clínico-radiológico de las micosis broncopulmonares.** [Clinico-radiological study of the broncho-pulmonary mycoses.] —*Rev. méd. Chile*, 77, 10, pp. 615–621, 10 figs., 1949.

A large proportion of atypical cases of lung disease are stated to be attributable to broncho-pulmonary mycoses. Of 23 such cases within the author's experience, three (all males, aged 45, 60, and 14 years) are selected for brief reports on the clinical, radiographical, and cultural findings. The organisms involved were *Candida intermedia*, *Aspergillus* sp., and *Actinomyces* sp. The importance of radiographical studies in all such anomalous cases is emphasized: the signs pointing to fungal infection of the bronchi and lungs are particularly clear in actinomycosis.

1711. Nilsby (I.) & Nordén (Å.). **Studies of the occurrence of Candida albicans.**—*Acta med. scand.*, 133, 5, pp. 340–345, 2 figs., 1949. [*B.H.*, 24, 965.]

Candida albicans did not develop in Petri dishes of Sabouraud's glucose agar exposed daily for a year in the open air at Örebro (where the fungus is commonly found in throat swabs from healthy persons and in the sputum of patients with various pulmonary diseases), and during the autumn of 1946 in three other towns of Sweden (a total of 600 plates). The fungus was also absent from private homes and hospital wards (110 plates), and from threshing dust after the harvest of 1946 (60). Infection by *C. albicans* is therefore presumed to be endogenous.

1712. Reich (W. J.) & Nechtow (M. J.). **Canine genital moniliasis as a source of reinfection in the human female.**—*J. Amer. med. Ass.*, 141, 14, pp. 991–992, 2 figs., 1949.

A case of vaginal moniliasis (*Candida albicans*), which proved refractory to treatment for over a year, was finally shown to be due to reinfection from dogs suffering from genital infections by the same fungus.

1713. Cazzola (D.). **Ricerche sperimentali sul 'Reinheitsgrad' del secreto vaginale in relazione alla presenza dei batteri, dei lieviti e degli ifomiceti.** [Experimental researches on the 'Reinheitsgrad' of the vaginal secretion in relation to the presence of bacteria, yeasts, and Hyphomycetes.]—Reprinted from *Folia gynaec., Pavia*, 42, 5, 24 pp., 2 graphs, 1947.

After reviewing earlier investigations into the subject, the author describes his own studies on the fungal flora ([unspecified] Saccharomycetes and Hyphomycetes) of the female genital apparatus, from which he concludes that complete fungal vaginal purity does not exist. The Saccharomycetes present possess latent pathogenicity.

1714. Cazzola (D.) & Orlandini (E.). **Considerazioni sulla flora saccaromicetica ed ifomicetica nella vagina della Donna (dal punto di vista sistematico, ed in relazione sia ai varî periodi della vita sessuale, sia alla flora schizomicetica ed allo stato anatomo-funzionale dell' epitelio, sia all' attività acidogena della flora presente nel secreto vaginale). (Nota sintetica.)** [Considerations on the Saccharomycete and Hyphomycete flora of the female vagina (from a systematic point of view, and in relation to the different periods of sexual life, the Schizomycete flora, the anatomical-functional state of the epithelium, and to the acidogenous activity of the flora present in the vaginal secretion). (A brief synthesis.)]—Reprinted from *Folia gynaec., Pavia*, 42, 6, 16 pp., 1 graph, 1947.

The authors discuss the results of their own and other workers' studies on the fungal flora of the female genital apparatus. Saccharomycetes are always present, whatever the 'degree of fungal purity'. There should be four degrees of purity, not five. The Hyphomycetes do not behave in a clear and constant manner, and are relatively unimportant from a biophysiological point of view. [An account of this work also appears in *Boll. Soc. ital. Biol. sper.*, 23, 3, pp. 255–265, 1947.]

1715. Solari (M. A.) & De Fernandez (María N. G.). **Investigación de Candida albicans en materia fecal.** [Investigation of *Candida albicans* in faecal material.] —*Rev. Asoc. argent. Dietol.*, 6, 23, pp. 218–220, 1948. [*B.A.*, 24, No. 6846.]

Candida albicans type S was isolated from the faeces of 20 members of a group of 57 human subjects, none of whom displayed cutaneous symptoms.

1716. Vivarelli (G.). **Mycokeratosis of palms due to Torula albicans.**—*G. ital. Derm. Sif.*, 84, 1949. [Abs. in *Brit. J. Derm. Syph.*, 62, 5, p. 228, 1950.]

Repeated mycological and cultural examinations of the keratotic, crusted lesions on the palms and soles, and of those associated with onychia of the finger and toe nails, in a 42-year-old patient uniformly revealed the presence of *Mycotorula* [*Candida*] *albicans*. Antigens prepared from cultures of the fungus gave strong agglutination and marked deviation of complement when tested against the patient's serum, even in 1 in 800 dilutions. Intradermal reactions were positive to a moderate extent. Topical applications of tincture of iodine effected a rapid cure of the lesions on the palms and soles, but those on the nails and peri-ungual regions yielded only to X-rays.

1717. Nickerson (W. J.). **Mechanism of cell division in pathogenic fungi.**—Abs. in *Amer. J. Bot.*, 36, 10, p. 812, 1949.

Inhibition of cell division in *Candida albicans* without appreciable inhibition of total growth, resulting in a mycelial type of growth, was obtained with dilute solutions of cobalt salts. Cobalt inhibition was more marked in magnesium-deficient media; magnesium deficiency alone results in deformation of the yeast shape rather than in elongation. Cobalt inhibition appears to be most pronounced with soluble starch as the carbon source, and at high carbon to nitrogen ratios. Nuclear division does not necessarily result in cell division; multinucleate filaments were observed.

1718. Viklický (J.). **One mocnění způsobená Candidou albicans.** [Infections caused by *Candida albicans*.]—*Arch. bohèm. méd.*, 51, 3, pp. 153–190, 11 figs., 1949. [Russian, English, and French summaries.]

The following method has been found very practical for the identification of the pseudomycelia of *Candida albicans*. Colonies from maltose agar are inoculated into a fluid medium consisting of four parts of tyrode fluid plus one part of non-haemolytic horse serum, passed through a Seitz filter. Pseudomycelia develop in 24 to 48 hours and present the appearance of cotton wool pads on the bottom and sides of the test tube, the fluid remaining perfectly clear. The process is accelerated at a temperature of 37° C. Using this method, *C. albicans* was identified on the skin of 15 to 20 per cent. of the healthy and sick persons examined in Prague; in the nails of 50 per cent.; in the mouths of 26 to 37 per cent.; and in the small bronchi of over 70 per cent. Intravenous injections of *Candida* into rabbits result in the development of miliary nodules in the kidneys whereas *Torula* injections are without effect. The diagnostic importance of material obtained either from clinically typical lesions, or from the deeper tissues is emphasized, since secondary infection by *C. albicans* is not excluded. Cures have been effected in cases of deep skin blastomycosis by means of unspecific and specific autovaccine and in vulvovaginitis by microbial filtrates.

1719. Fischer (E.). **Beitrag zur mykologischen Diagnostik des Soorpilzes.** [Contribution to the mycological diagnosis of the yeast fungus.]—*Schweiz. Z. allg. Path. Bakt.*, 13, 2, pp. 139–145, 2 figs., 1950. [French, Italian, and English summaries.]

Out of 32 strains of yeast-like fungi isolated by the method of Conant *et al.* (Manual of Clinical Mycology, 1947) at the Dermatological Clinic of the University of Zürich, eight were identified as *Candida albicans*. Flour agar cultures were pathogenic to rabbits in intracutaneous tests.

1720. Kligman (A. M.). **Aids in technic in the identification of Candida albicans.**—*J. invest. Derm.*, 14, 3, pp. 173–176, 6 figs., 1950.

The application of a flamed cover-slip over the inoculated streak in maize meal agar cultures of *Candida albicans* encourages more luxuriant and more rapid growth of the chlamydospores, on which the identification of the species is largely based.

1721. Conant (N. F.). **Laboratory diagnosis of pulmonary mycoses.**—*Amer. Rev. Tuberc.*, 61, 5, pp. 690–704, 3 pl., 1950.

Directions are given for the laboratory diagnosis of pulmonary mycoses, which simulate tuberculosis both clinically and pathologically, by the direct examination and culture of sputum, pathogenicity experiments with the organisms isolated, and sensitivity and serological tests. The fungi concerned are *Actinomyces bovis* [*A. israeli*], *Nocardia asteroides*, *Coccidioides immitis*, *Blastomyces dermatitidis*, *B.* [*Paracoccidioides*] *brasiliensis*, *Histoplasma capsulatum*, *Cryptococcus neoformans*, *Candida albicans*, and *Geotrichum candidum*.

1722. Negroni (P.) & Daglio (C. A. N.). **Aplicación de nuevas técnicas para el estudio fisiológico de los hongos levaduriformes.** [The application of new techniques to the physiological study of yeast-like fungi.]—*An. Soc. cient. argent.*, 148, 4, pp. 271–278, 3 figs., 1949. [English and French summaries.]

Of the three methods tested in the auxanographic study by Beijerinck's method of 16 yeasts [No. 1203], including *Candida albicans*, ten other *C.* spp., and *Torulopsis* [*Cryptococcus*] *neoformans*, namely, (1) the Oxford cylinder, (2) filter paper disks of 1 cm. diameter, and (3) the agar cup, using 10 per cent. sugar solutions and 1 per cent. sources of nitrogen, the first-named proved the most effective. The results are presented in tabular form.

1723. Langeron (M.) & Luteraan (P. J.). **L'immersion des champignons levuriformes dans les milieux de culture solides.** [Immersion of yeast-like fungi in solid culture media.]—*Ann. Parasit. hum. comp.*, 24, 1–2, pp. 143–179, 1 pl., 1 fig., 1949.

A study of the phenomenon named by Langeron and Talice in 1932 'immersion in solid culture media' in 46 species of yeast-like fungi, including *Candida albicans* and 15 other species of *Candida*, showed that this process occurs only in fungi growing in the presence of oxygen [No. 1430]. It is favoured by nitrogen unbalance, the use of nitrates, tyrosin, and glycerol, progressive acidification of the medium by the utilization of ammonium salts, and by dehydration. The process is the manifestation of a physiological anti-oxygen function. The morphological importance of the character is considerable as it is individual to the species, and varies in the date of its occurrence and the character of its appearance.

1724. Pereira (M. J.). **Mycotorula schawi n.sp.**—*Rev. Med. R. Grande Sul*, 5, 26, pp. 61–69, 5 figs., 1948. [Portuguese.]

A description is given of the macroscopic and microscopic characters and biological properties of *Mycotorula schawi* n.sp., isolated at Richmond, Virginia, from the faeces of a patient of the late Dr. F. W. Schaw with a chronic diarrhoea, together with a note on its effects on laboratory animals and a discussion of its systematic position. In pure culture the fungus is composed of saccharomycetiform cells, without accessory conidial forms. Pseudohyphae are present and multiplication is effected by means of blastospores, 2 to 5 μ in diameter. The optimum temperature for growth is 37° C. On standard

solid media the colonies are moist, black, and glistening, with irregular margins. Gelatin is slowly liquefied, milk is not coagulated, and carbohydrates are not fermented. Raffinose, inositol, inulin, and potassium nitrate are not utilized, but the auxanogram for polyalcohols, sugars C^5 and C^{12}, ammonium sulphate, peptone, and urea is positive. Pathogenicity to the guinea-pig and white rat was demonstrated.

1725. Kunstadter (R. H.), Milzer (A.), & Whitcomb (Frances). **Broncho-pulmonary geotrichosis in children.**—*Amer. J. Dis. Child.*, 79, 1, pp. 82–90, 5 figs., 1950.

The clinical course and roentgenological appearance of broncho-pulmonary geotrichosis (*Geotrichum* sp.) in two children, a six-year-old boy and his four-year-old sister, are described. A two-year-old sibling and both parents also reacted positively to the *Geotrichum* skin test but showed no evidence of pulmonary disease. The elder child's condition gradually improved under a combination of iodide therapy and roentgen irradiation for a period of nine months, but a more rapid and complete clearing of the pneumonic process in the younger one was effected by the former treatment alone.

Broncho-pulmonary mycosis should be considered in the differential diagnosis of chronic bronchitis, atypical and bacterial pneumonia, pulmonary fibrosis, and tuberculosis. Geotrichosis is to be differentiated from other mycoses, and the establishment of an etiological diagnosis should be attempted by all available facilities, including history, serial roentgenograms, fungal skin tests, and cultures of sputum and bronchial secretions on Sabouraud's medium.

1726. Reilly (E. B.) & Steel (H. H.). **Mycetoma. Report of a case of actinomycotic variety.**—*New Engl. J. Med.*, 241, 23, pp. 900–905, 3 figs., 1949.

Following an introductory survey of the nomenclature, history, pathology, mycology, diagnosis, and treatment of mycetoma or Madura foot, the authors describe a case of the disease in a 51-year-old negro patient at the Lake City (Florida) Veterans Administration Hospital. The infection is believed to have been of actinomycotic origin, but repeated cultures yielded only *Aspergillus niger* and the patient was sensitive to an extract of this organism, which may have been growing as a secondary invader in the superficial layers of the diseased tissues. Various therapeutic treatments having proved unavailing, amputation was carried out with satisfactory results.

1727. Mackinnon (J. E.), Ferrada (L. V.), & Montemayor (L.). **Investigaciones sobre las maduromicosis y sus agentes. Definiciones, descripción de una nueva especie hallada en varios países de América del Sur y consideraciones sobre la observación de lesiones viscerales parecidas.** [Investigations on maduromycosis and its agents. Definitions, description of a new species obtained in various countries of South America and considerations on the observation of the visceral lesions encountered.]—*An. Fac. Med. Montevideo*, 34, 1–3, pp. 231–400, 8 pl., 1949. [English summary.]

Among the 12 strains of fungi isolated from cases of black maduromycosis in Paraguay and other South American countries five types or groups of species could be distinguished on the basis of morphological and biological characters. Type I comprises *Madurella americana* Gammel, Miskdjian, & Thatcher, 1926 and *M. ikedae* Gammel, 1927, which the authors regard as synonymous, *M. tozeuri*, and cultures received under the name *M. mycetomi* (a *nomen dubium* which should no longer be used). The strains form colonies

consisting of an ochreous mycelium covered by a short, white pubescence, turning yellow or ochre; they utilize lactose but not sucrose, and their optimal growth temperature is about 37° C. Fungi of this type have been isolated in North and West Africa and in the south of the United States. The bones are seldom attacked.

Hard colonies, composed of a nearly black mycelial mass, covered with a grey pubescence, turning brown, are characteristic of type II, comprising *Madurella grisea* n. sp. and possibly *Glenospora semoni* Chalmers & Archibald, 1917. *G. khartoumensis* Chalmers & Archibald, 1916, similar in some respects, differs from *M. grisea* in its copious aleuriospore production and non-hydrolysis of starch. *M. grisea* appears to have a predilection for the bones. It produces hard, black grains with hyphae united by a brown, pigmented mass. Type II strains (of which five were studied) utilize sucrose but not lactose, and develop best at 30°.

Phialophora jeanselmei is the sole representative of type III. Its soft, black grains are formed by detached hyphae. The optimal temperature for growth is 30°. Types IV and V comprise, respectively, *G. clapieri* and *Monosporium sclerotiale*. The former is a thermophilic species which utilizes glucose and peptone as sole sources of carbon and nitrogen, respectively. The latter grows best at 25° and utilizes glucose, saccharose, and lactose.

Pulmonary aspergillosis is sometimes associated with grains similar to those of maduromycosis and a case caused by *Aspergillus fumigatus* was studied. The intervention of *A.* spp. in some cases of maduromycosis of the feet was confirmed.

1728. Wolf (F. T.), Bryden (R. R.), & Maclaren (J. A.). **The nutrition of Monosporium apiospermum.**—*Mycologia*, **42**, 2, pp. 233–241, 1 graph, 1950.

Monosporium apiospermum [*Allescheria boydii*], the most frequent cause of Madura foot in the continental regions of the United States [No. 973], was ascertained to utilize a wide variety of sugars, alcohols, amino acids, and organic acids [which are specified] as sources of carbon.

1729. Kligman (A. M.). **A Basidiomycete probably causing onychomycosis.**—*J. invest. Derm.*, **14**, 1, pp. 69–70, 1 fig., 1950.

A case of onychomycosis, involving principally the large toes of both feet of a 33-year-old male, is reported from the University of Pennsylvania Medical School, Philadelphia. *Schizophyllum commune* developed on pieces of the nail tissue in Sabouraud's agar cultures and is thought to have been the agent of the trouble.

1730. Dominguez (C. M.) & Selinke (H.). **Plasmocitoma de O'Kinealy y Seeber de las fosas nasales.** [Plasmocytoma of O'Kinealy and Seeber of the nasal fossae.]—*An. Fac. Med. Montevideo*, **33**, 11–12, pp. 1200–1207, 1 fig., 1948.

The first case of rhinosporidiosis (*Rhinosporidium*) [*seeberi*] in Uruguay is reported from the Hospital Central, Montevideo, where the fungus was isolated from a nasal polypus in a 24-year-old soldier.

1731. Coehlo (B.). **Rinosporidiose** [Rhinosporidiosis.]—*An. Fac. Med. Recife*, **20–21**, 5–10, 1945 (1946). [*B.A.*, **24**, No. 6837.]

Two cases of [? human] rhinosporidiosis [*Rhinosporidium seeberi*] are reported, the first in north-eastern Brazil. Reaction took the form of a vascular granulation tissue rich in plasma cells, with smaller numbers of lymphocytes, polymorphonuclear neutrophiles, and eosinophiles, as well as numerous Russell-Plimmer bodies. In one case, giant cells of foreign-body type developed, with areas of necrosis.

1732. Lopez (A. A.) & Filho (A. M.). **Epidermomicose por Rhodotorula.** [Epidermomycosis caused by *Rhodotorula*.]—*An. paulist. Med. Cirurg.*, 58, 3, pp. 219–220, 1949. [*B.A.*, 24, No. 6844.]

A species of *Rhodotorula* was identified as the cause of a case of human dermatitis.

1733. Rothman (S.). **Susceptibility factors in fungus infections in Man.**—*Trans. N.Y. Acad. Sci.*, Ser. II, 12, 1, pp. 27–33, 1949.

The colonization of a dermatophyte on the human skin and the subsequent course of infection depend on a great variety of susceptibility factors, the functions of which are discussed under the headings of local factors (regional susceptibility and role of moisture) and general factors, comprising sex, age, hormonal factors, metabolic anomalies, lymphoblastomata, and monilial granuloma.

1734. Dowling (G. B.). **'Athletes' foot.'**—*Trans. med. Soc. Lond.*, 65, (*1947–1949*), pp. 262–267, 1949.

The problem of 'athletes' foot', a serious one in England, is surveyed under the aspects of clinical characteristics, differential diagnosis, complications, and prophylaxis and treatment.

1735. Tanissa (A.). **Teigne tondante par infection mixte à Trichophyton granulosum et T. violaceum.** [Ringworm due to mixed infection by *Trichophyton granulosum* and *T. violaceum*.]—*Ann. Parasit. hum. comp.*, 24, 5–6, pp. 547–554, 1 pl., 1949.

From a ringworm of the scalp affecting a 10-year-old girl in Lisbon the author isolated *Trichophyton granulosum* and *T. violaceum*. The former appears to have been isolated only once before from a human skin disease in Portugal.

1736. Stavraniopoulos (T. G.). **L'isolement de l'Achorion schönleini en Grèce sur le milieu nutritif de Sabouraud modifié.** [The isolation of *Achorion schoenleini* in Greece on a modified Sabouraud's nutrient medium.]—*Ann. Inst. Pasteur*, 78, 1, pp. 149–150, 1950.

The addition to Sabouraud's dextrose agar of the blood serum of diabetic subjects (2 ml. per tube) enabled the author to obtain typical pure cultures of *Achorion* [*Trichophyton*] *schoenleini* in 87 per cent. of his 58 cases of various forms of human favus. Successive subcultures gave rise to intermediate and 'downy' forms, differing essentially from the parent cultures in volume, fineness of circumvolutions, growth rate, and colour. All forms of the disease, whether involving the scalp, glabrous skin, or nails, are thought to be due exclusively to *T. schoenleini*, which does not occur in two forms but assumes different aspects according to the site of infection.

1737. Montanaro (E.). **Tigna torpida tonsurante insorta in soggetto adulto affetto da nanismo.** [Refractory torpid tinea tonsurans in an adult patient affected by nanism.]—*Arch. ital. Derm.*, 21, 5, pp. 364–369, 1948.

A species of *Microsporum* was isolated from preparations from the scalp of a 22-year-old male patient at the Dermatological Clinic of the University of Modena. The accompanying conditions of myxoedematous nanism and sexual under-development are of interest in relation to the possibility of therapy by means of sex hormones.

1738. Carli (G.). **Favo epidermico dello scroto ed eritemato-squamoso della cute glabra.** [Epidermal favus of the scrotum and erythemato-squamous of the glabrous skin.]—*Arch. ital. Derm.*, 22, 1, pp. 49–53, 1 fig., 1949.

Achorion [*Microsporum*] *gypseum* was the pathogen involved in the case of favus of the scrotum in an 18-year-old youth herein reported from the dermatological clinic of the University of Padua.

1739. Vanbreuseghem (R.). **Contribution à la connaissance de Ctenomyces persicolor. Apport d'un cas personnel.** [A contribution to the knowledge of *Ctenomyces persicolor*. Presentation of a personal case.]—*Ann. Parasit. hum. comp.*, 24, 1–2, pp. 124–142, 1 col. pl., 1949.

From a lesion on the leg of a 13-year-old-boy in Belgium the author isolated a fungus which in culture on sugar-containing substrata assumed a peach-pink colour and on peptone media without sugar became violaceous-red. It quickly showed pleomorphism. Aleuria were present in clusters, others were of the *Acladium* type, and chlamydospores, nodular organs, fuseaux, 'stag's horns', spirals, and crosier-shaped hyphae were observed. Occasionally the aleuria were arranged like a cross with two bars. The author identifies the fungus as *Ctenomyces* [*Trichophyton*] *persicolor*.

1740. Sylvest (B.). **The incidence of dermatophytes in Denmark.**—*Acta derm.-vener., Stockh.*, 29, 3, pp. 225–232, 3 graphs, 1949. [French and German summaries.]

During the period from 1933 to 1947 14 species of dermatophytes were cultured at the Finsen Institute, Copenhagen, of which *Trichophyton interdigitale* was the most prevalent, occurring in 1,107 out of a total of 1,544 isolations. It was followed by *T. gypseum asteroides* [*T. mentagrophytes*] (195), *Epidermophyton inguinale* [*E. floccosum*] (142), *T. faviforme* (68), *Achorion* [*Microsporum*] *gypseum* (12), *M. lanosum* [*M. canis*] (9), *T. purpureum* [*T. rubrum*] (4), and *A.* [*T.*] *schoenleini*, *M. audouini*, *T. radiolatum*, *T. persicolor*, *T. cerebriforme* [*T. flavum*], *T. exsiccatum*, and *T. rosaceum* (1 each). The rise in frequency of *T. interdigitale* and *E. floccosum* from 1943 to 1946 may be explained by the extended use of public baths, while a similar trend in the incidence of *T. mentagrophytes* and *T. faviforme* from 1940 onwards probably coincides with an increase in cases of ringworm among cattle.

1741. Bender (Elisabeth). **Epidemiologische und sozialhygienische Betrachtungen über zwei in Köln aufgetretene Mikrosporieendemien.** [Epidemiological and social-hygienic reflections on two microsporiosis endemics occurring in Cologne.]—*Öffentl. GesundhDienst*, 12, 3, pp. 91–96, 1950.

This general review of the epidemiological and social-hygienic factors concerned in the spread of microsporiosis (*Microsporum audouini*) in Germany was prompted by the occurrence of the disease in two Cologne orphanages in January to March, 1949. In one instance two 20-year-old household assistants and three 16- to 17-year-old domestic science pupils were affected besides the children.

1742. Kruspe (M.). **Die Erkennung und Behandlung der Mikroskopie.** [The diagnosis and treatment of microsporosis.]—*Med. Klin.*, 45, 20, pp. 622–626, 1950.

In connexion with an epidemic of microsporosis (*Microsporum audouini*) at Solingen (Rheinland), in 1949, involving ten boys and girls aged between four

and ten, a summary is given of the known facts relating to the nature, distribution, agency, transmission, mode of infection, clinical appearance, anomalous forms, diagnosis, and therapy of the disease. This is the first outbreak on record for Solingen.

1743. Marchionini (A.) & Götz (H.). **Über Kopfpilzerkrankungen in Anatolien mit besonderer Berücksichtigung des Favus.** [On fungal diseases of the scalp in Anatolia, with special reference to favus.]—*Arch. Derm. Syph., Berl.*, **190**, 1, pp. 75–88, 5 figs., 1950.

Out of 108 samples of hair examined in the course of studies at the University Skin Clinic, Ankara, Turkey, in 1948–9, on the incidence of scalp infections, especially favus, in Anatolia, 100 were microscopically positive, 78 being identified as *Achorion* [*Trichophyton*] *schoenleini*, two each as *A.* [*T.*] *violaceum*, *T. faviforme album*, and *T. violaceum*, one as *T. f. ochraceum*, and 12 as *Microsporum lanosum* [*M. canis*]. There were also three cases of double infection, viz., (1) *T. schoenleini* and *M. canis* (first on record), (2) *T. schoenleini* and *T. f. album*, and (3) *T. schoenleini* and *T. violaceum*. A noteworthy feature of infection by *T. schoenleini* is the brevity of the incubation period, not exceeding five days in 67 per cent. of the cases under investigation.

1744. Salazar Leite (A.), Bastos Daluz (J.), & Viana de Meira (M.). **Die Grinde der Neger von Angola.** [Ringworm among the negroes of Angola.]—*Act. derm. sif., Madr.*, 38, pp. 1173–1178, 1947. [Spanish. Abs. in *Zbl. Hautu.-GeschlKrank.*, 75, 1–2, p. 41, 1950.]

Of 74 cultures isolated from cases of ringworm among the negro population of northern Angola, 71 were identified as *Trichophyton ferrugineum* (probably the first record for Africa) and three as *Microsporum felineum* [*M. canis*].

1745. Greenwood (K.). **Common skin disorders of the Army in the tropics.**—*J. R. Army med. Cps*, 92, 6, pp. 284–289, 1949. [*T.D.B.*, 46, p. 1077.]

At the Military Hospital, Singapore, fungal infections accounted for 20 per cent. of all out-patients and 28 per cent. of in-patients [period not specified]. The commonest fungus isolated was *Trichophyton mentagrophytes*, considered by the author to be a variant of *T. interdigitale* and to have been introduced into Malaya on the feet of European soldiers. Other fungi found were *T. interdigitale*, *Epidermophyton floccosum*, and *T. rubrum*. A useful prophylactic paint consisted of brilliant green, 1, hydrarg. perchlor. 0·1, and 70 per cent. spirit to 100.

1746. Green (R.) & Mankikar (D. S.). **Trichosporosis (piedra) in Malaya.**—*Trans. roy. Soc. trop. Med.*, 43, 4, pp. 523–526, 12 figs., 1950.

A general account is given of the hair disease known as trichosporosis (piedra), with a note on a case in a 27-year-old male European who had spent three years in Malaya. The fungus isolated from the infected material in the present case (on Emerson's agar) and four others previously reported from Malaya differs from *Piedraia hortai* in its smaller spores (4 or 5 μ as compared with 7 to 12 μ) and the name of *P. malayi* is therefore proposed for it. A cure was effected by cutting away the diseased hair, discontinuance of a mucilaginous hair fixative, the use of a soap incorporating 1 per cent. mercuric iodide, and the application of a lotion containing 2 per cent. salicylic acid and 5 per cent. chloretone.

1747. Sharp (W. B.) & Wegner (Mildred J.). **Microsporum gypseum as an etiologic agent of tinea in the United States.**—*Arch. Derm. Syph., Chicago*, 61, 5, pp. 824–829, 3 figs., 1950.

Microsporum gypseum is rarely mentioned as an agent of tinea capitis in the United States, but it has repeatedly been observed in this capacity at Galveston, Texas, generally causing a more intense inflammatory reaction than that due to *M. canis*, the most prevalent species in the locality. *M. gypseum* tended to predominate in the four- to five-year-old age group.

1748. Burke (R. C.) & Bumgarner (F. E.). **Superficial mycoses of veterans; II. Dermatophytosis and cutaneous moniliasis; correlation of clinical manifestations and etiologic agent.**—*Arch. Derm. Syph., Chicago*, 60, 6, pp. 1120–1129, 1949.

Of the 429 cases of proved dermatophytosis among 1,000 veterans of the United States Army [No. 1465], there were 360 of tinea pedis, of which 186 (51 per cent.) yielded fungi as follows: *Trichophyton gypseum* [*T. mentagrophytes*] in 118 (63 per cent.), *T. rubrum* in 58 (31), *Epidermophyton floccosum* in 4 (2), and *Candida albicans* in 6 (3).

Of the 245 cases of tinea unguium, 222 involved the toe- and 23 the finger-nails. Infection of the toe-nails was proved by laboratory examination in 60 per cent. of the cases of tinea pedis to be associated with *T. mentagrophytes* and *T. rubrum*. The former species was also isolated from a finger-nail bed in one case, while *C. albicans* was cultured from the toe-nails in 33 per cent. and from the finger-nails in 56 per cent. of the cases.

Tinea cruris ranked third in prevalence, comprising 86 of the 429 cases, of which only 29 (33·7 per cent.) yielded fungi as follows: *T. mentagrophytes* in 8 (27·5 per cent.), *T. rubrum* in 16 (55·4), *E. floccosum* in 1 (3·3), and *C. albicans* in 4 (13·8).

In only 10 out of the 48 cases of proved tinea manus were the hands alone involved. *T. rubrum* was identified in 21 out of 32 cultures (65·7 per cent.) from these patients, the corresponding figure for *T. mentagrophytes* being 11 (34·3). Only five negroes were affected by this form of dermatophytosis (a ratio of one to three white patients). One-third of the patients with verified lesions of tinea manus had been working with motor fuels and machinery at the time of onset.

Generalized dermatophytosis (affecting five or more sites) occurred in 13 of the 429 cases under observation (3 per cent.).

1749. Lehmann (C. F.), Pipkin (J. L.), & Ressmann (A. C.). **Cultural survey of tinea capitis in San Antonio, Texas.**—*Arch. Derm. Syph., Chicago*, 61, 3, p. 488, 1950.

Cultures from 170 cases of ringworm of the scalp encountered in private practice in San Antonio, Texas, between February, 1946 and August, 1948 were determined as follows: *Microsporum* sp. 115 cases (68 per cent.), *M. lanosum* [*M. canis*] 90 (53), *M. audouini* 19 (11), *M. fulvum* [*M. gypseum*] 6 (4), *Trichophyton* sp. 55 (22), *T. mentagrophytes* 23 (14), *T. tonsurans* 18 (11), *T. violaceum* 4 (2), and unidentified 10 (5).

1750. Georg (Lucille K.) & Maechling (Eugenia H.). **Trichophyton mentagrophytes (variety nodular). A mutant with brilliant orange-red pigment isolated in nine cases of ringworm of the skin and nails.**—*J. invest. Derm.*, 13, 6, pp. 339–350, 5 figs., 1949.

Four strains of an orange-red variant of *Trichophyton mentagrophytes*, designated var. *nodular*, have been isolated from patients with ringworm of

the glabrous skin and nails at the Vanderbilt Clinic, New York City, during the last two years, and five similar cultures have been received within the same period from other parts of the United States and Canada. The variant differs from the normal type of the species in the following particulars besides its brilliant orange-red pigmentation: the more fluffy appearance and rapid growth of the aerial mycelium with fewer conidia than the normal and rare production of spirals and macroconidia, and the presence in the submerged mycelium of large numbers of nodular bodies, usually with one or two ends projecting from the mass, formed by the aggregation into clusters of three or four irregular, twisted, short branches developing from the side branches of the mycelium.

The study of monospore isolates from a monospore culture of *T. mentagrophytes* (normal type) revealed the presence of variants resembling the orange-red cultures herein described. The mutants have remained stable for over two years on Sabouraud's dextrose agar and their characteristics underwent no change as a result of passage through rabbits.

1751. Strauch (J. H.). **Coexisting tinea capitis and alopecia areata.**—*Arch. Derm. Syph., Chicago*, 61, 5, pp. 863–864, 1950.

A case of co-existent tinea capitis and alopecia areata in a 13-year-old boy is reported from Ohio. Spontaneous spread of the latter condition resulted in the shedding of infected hairs with resultant cure of the ringworm.

1752. Moore (M.) & Wooldridge (W. E.). **Kerion caused by Trichophyton sulfureum : report of a case.**—*Arch. Derm. Syph., Chicago*, 61, 3, pp. 460–465, 2 figs., 1950.

Kerion caused by *Trichophyton sulphureum* is reported (apparently for the first time) as occurring on the scalp of an eight-year-old negro girl at the Barnard Free Skin and Cancer Hospital, St. Louis, Missouri. Two brothers, aged six and seven, likewise showed tinea capitis with a tendency to kerion formations, due to the same fungus, the mycological characters of which are described.

1753. Barrett (C. C.). **Endemic favus.**—*Sth. med. J.*, 43, 8, pp. 685–689, 1950.

A group of cases of favus is reported from eastern Kentucky. The age of the patients ranged from 6 to 17 years and the sexes were about equally affected. In one family there were five cases, in another three, and in several families two each. All but two of the affected persons were living under conditions of extreme poverty and squalor. The clinical features of the disease are summarized with special reference to its appearance under Wood's light. The prevailing social and economic factors are advanced as a possible explanation of the presence of favus in the area.

1754. Eppright (B. R.) & McCuiston (C. H.). **Endemic favus in Texas.**—*Arch. Derm. Syph., Chicago*, 60, 6, pp. 1208–1209, 1949.

Achorion [*Trichophyton*] *schoenleini* was isolated from the scalp of a 36-year-old woman at Austin, Texas. There are very few previous records of favus in the State.

1755. Hirschmann (V. R.) & Olansky (S.). **Ringworm of the scalp of an adult : report of a case.**—*Arch. Derm. Syph., Chicago*, 61, 1, pp. 122–124, 1 fig., 1950.

A case of tinea capitis (*Microsporum audouini*) in a 40-year-old male negro is reported from the Duke Hospital, Durham, North Carolina. A satisfactory

response was obtained by roentgen epilation of the infected hairs, followed by topical applications of fungicidal ointments, beginning with copper undecylenate, which was later replaced by 5 per cent. salicylanilide.

1756. Slaughter (J. C.), Dalton (J. E.), Jenkins (R. E.), & Booth (B. H.). **Tinea capitis : a review of the problem.**—*J. Indiana med. Ass.*, 42, 10, pp. 1070–1072, 1949.

An epidemic of dry, scaling ringworm of the scalp (*Microsporum audouini*) has been present in the United States for six years and is well established in Indiana among children under the age of puberty. It is more common in boys than in girls by a ratio of 9 to 1. X-ray epilation, supplemented by local treatment, is the only cure. Suggestions are made for the co-operation of school and health authorities with the medical profession in the control of the epidemic, e.g., by the routine examination of schoolchildren and the contacts of infected individuals by means of Wood's light.

1757. Franks (A. G.), Mandel (E. H.), & Sternberg (A. S.). **Endemic of infection with Microsporum audouini in a family of eight persons.**—*Arch. Derm. Syph., Chicago*, 62, 1, pp. 54–57, 1950.

Technical assistance was afforded by F. E. Karpluk, G. R. Anderson, and A. Victor in this study on an epidemic of infection by *Microsporum audouini* definitely involving seven, and probably all eight members of a New York family (including two 31-year-old persons) living under crowded conditions. The response to trichophytin tests was negative. All the lesions except those on the scalp and eyelashes (a very rare site of infection encountered in one juvenile patient only) yielded in three to ten days to treatment with 5 per cent. ammoniated mercury ointment. Roentgen epilation was necessary in the two cases of tinea capitis, while the eyelashes were removed by hand.

1758. Loewenthal (K.). **Tinea capitis due to combined infection with Microsporum audouini and Microsporum lanosum : report of a case.**—*Arch. Derm. Syph., Chicago*, 58, 1, 27–33, 3 diags., 1948.

A case of ringworm of the scalp in an 11-year-old negro girl at Long Island College Hospital was shown to be due to combined infection by *Microsporum audouini* and *M. lanosum* [*M. canis*], of which this is stated to be the first record. The condition proved refractory to treatment for 2½ years. On Sabouraud's dextrose agar *M. canis* grew fairly rapidly, covering the surface of the slant in an average period of 7 to 14 days. The aerial mycelium was relatively abundant. A lemon-yellow pigment appeared in younger colonies, changing to brownish-red with advancing age. *M. audouini* developed more slowly, taking two to four weeks to cover the surface of the agar slant; the closely matted aerial mycelium was rather scanty; and the lemon-yellow pigment characteristic of *M. canis* was absent, the brownish-red coloration appearing fairly early on the under surface of the colony.

M. canis produced numerous 4- to 7-septate macroconidia of the tapering fuseaux type, within five days but such structures were virtually absent in cultures of *M. audouini*.

1759. Loewenthal (K.). **Fuseaux formation of the genus Microsporum.**—*Arch. Derm. Syph., Chicago*, 61, 3, pp. 455–459, 1950.

Further details are given of the cultures of *Microsporum canis* (two strains) and *M. audouini* isolated from the case of tinea capitis described in the preceding entry. An interpretation of the available data permits the conclusion

that a freshly isolated strain of *M. audouini* may show a certain amount of fuseaux formation, whereas one of *M. canis*, persistently failing to produce macroconidia, may simulate *M. audouini*.

1760. Vallejo Vallejo (L.) & Rodríguez de Gregorio (E.). **Contribución al estudio de las epidermomicosis in Tucumán.** [A contribution to the study of epidermomycoses in Tucumán.]—*Prensa méd. argent.*, 36, 52, pp. 2772–2774, 1949.

In a series of 4,927 cases of cutaneous diseases examined in Tucumán, Argentina, 482 (9·78 per cent.) were affected by epidermomycosis, mostly of the feet (169 or 35·3 per cent.), followed by pityriasis versicolor [*Malassezia furfur*] (87 or 18 per cent.), and blastomycotic intertrigo (56 or 11·6 per cent.). Of 33 persons (6·9 per cent.) suffering from ringworm of the scalp, 18 had trichophytosis and 15 microsporiosis, the fungi developing in cultures from the infected sites being *Microsporum canis* (8), *Trichophyton mentagrophytes*, *T. rubrum*, and *T. crateriforme* [*T. tonsurans*] (2 each), and *T. acuminatum* [*T. sabouraudi*] (1).

1761. McVeigh (Ilda) & Campbell (Florence). **The growth of Trichophyton mentagrophytes and five of its variants as affected by several nitrogen sources.**—Abs. in *Amer. J. Bot.*, 36, 10, p. 812, 1949. [And see *Mycologia*, 42, pp. 451–69.]

Of six forms of *Trichophyton mentagrophytes* studied, the three mycelial forms (B, 7 a 14, and 4 a 15) utilized nitrogen from inorganic and simple organic sources more readily than the conidial forms (4 a 4, N, and D 1). All forms grew well when complex organic nitrogen sources were supplied. No single amino acid, used in quantities equivalent in nitrogen content, supported growth as well as did casein hydrolysate. After 14 days' incubation in media containing casein hydrolysate, asparagine, or urea, the slow-growing, conidial forms caused a change in pH from 5–5·5 to neutrality or slight alkalinity, though the rapidly growing, mycelial forms produced little or no change. In medium containing glutamic acid the reverse held. Dry weight determinations indicated that the order of magnitude of growth of the normal form and its five variants remains essentially the same on each source of nitrogen; cultures of any one form growing on different agar media show certain constant growth characteristics. These results support the view that the variants of *T. mentagrophytes* are due to mutations.

1762. Vanbreuseghem (R.). **Technique de Filatov et culture de Dermatophytes.** [The technique of Filatov and the culture of dermatophytes.]—*Ann. Parasit. hum. comp.*, 24, 5–6, pp. 555–558, 1949.

When *Trichophyton schoenleini*, *T. violaceum*, *T. glabrum*, *Sabouraudites* (*Microsporon*) *felineus* [*Microsporum canis*], and *S.* (*M.*) *duboisi* were grown in culture media to which a small piece of placenta had been added, using Meyer and Kanitakis's technique, after a few days the volume of the colonies was three times that of the controls on the same media without placenta, though the diameters were the same. When an aqueous extract of placenta was used similar results were obtained.

1763. Kligman (A. M.) & Rebell (G.). **The routine cultural identification of Microsporum ringworm of the scalp.**—*J. invest. Derm.*, 13, 3, pp. 135–137, 1 diag., 1949.

The following method has been found useful in the routine separation of *Microsporum audouini* and *M. canis* in a series of 132 cases at the University

of Pennsylvania Medical School, Philadelphia. After examination under Wood's light the hairs are planted directly in a drop of liquid honey or other media of the Sabouraud type on a sterilized glass slide, in a moist Petri dish the routine substratum in these studies consisting of 60 gm. honey 10 gm. neopeptone, 1·5 gm. agar, and 1 l. water, made up in 250-ml. flasks, with the addition of streptomycin and penicillin at a dosage of 50 units of each per ml.

1764. Vanbreuseghem (R.). **La culture des dermatophytes in vitro sur les cheveux isolés.** [The culture of dermatophytes *in vitro* on single hairs.]—*Ann. Parasit. hum. comp.*, 24, 5–6, pp. 559–573, 3 pl., 2 figs., 1949.

When 25 strains of *Ctenomyces*, *Sabouraudites*, *Trichophyton*, and *Epidermophyton* were grown, on over 200 occasions, on single human hairs *in vitro*, the morphological characters were identical with those observed in culture, and in no instance did the parasitic form develop. Two main forms of lesion were observed. In one (caused only by strains of *T. rubrum*) the hair rotted round its diameter, and sometimes broke; in the other, fissures perpendicular to the main axis were caused by the penetration of 'perforating organs'. The latter type of lesion also frequently resulted in breakage.

1765. Serri (F.). **The effect of paraminobenzoic acid on the growth of cultures of various dermatomycetes.**—*Acta vitaminol.*, 2, 1948. [Abs. in *Brit. J. Derm. Syph.*, 62, 5, p. 220, 1950.]

The examination of solid and liquid cultures of *Sporotrichum epigaeum*, *Trichophyton gypseum asteroides* [*T. mentagrophytes*], *T. rosaceum* [*T. roseum*], and *T. pedis* [*T. mentagrophytes*], supplemented by paraminobenzoic acid at concentrations ranging from 1 in 50 to 1 in 10,000,000, indicated that the compound is not an indispensable growth factor for these dermatophytes. Its presence, however, does influence their development, low concentrations being biotrophic and high ones fungistatic.

1766. Sartory (A.), Sartory (R.), Meyer (J.), & Schurmann (W.). **Un nouveau milieu de choix pour la culture des dermatophytes.** [A new elective medium for the culture of the dermatophytes.]—*C. R. Acad. Sci., Paris*, 230, 18, pp. 1608–1609, 1950.

A synthetic medium consisting of 1 gm. monopotassic phosphate, 0·10 gm. calcium chloride, 0·50 gm. magnesium sulphate, 0·30 gm. potassium silicate, 40 gm. glucose, 6·50 gm. glutamic acid, 0·003 gm. folic acid, 0·012 gm. each of calcium pantothenate and nicotylamide, 1,000 gm. distilled water, and 20 gm. agar compared very favourably, as regards onset of growth and luxuriance and constancy of aspect of the colonies, with seven other synthetic substrata and Sabouraud's agar for the culture of *Trichophyton crateriforme* [*T. tonsurans*], and with Sabouraud's liquid medium for that of *T. inguinale* [*Epidermophyton floccosum*], *T. mentagrophytes*, *T. umbilicatum*, *Microsporum audouini*, *M. lanosum* [*M. canis*], *Achorion* [*T.*] *quinckeanum*, and *Aleurisma strasburgiensis*.

1767. Georg (Lucille K.). **Conversion of tryptophane to nicotinic acid by Trichophyton equinum.**—*Proc. Soc. exp. Biol., N.Y.*, 72, 3, pp. 653–655, 1949.

A strain of *Trichophyton equinum* supplied by the Culture Bureau for Fungi, Delft, Holland, was unable to grow on a vitamin-free basal agar medium, but it developed on the addition of nicotinic acid or nicotinic amide or l-tryptophane at concentrations of 0·1 mg. per 5 ml. The last-named suo-

stance was converted by the fungus into nicotinic acid during a period of six weeks' growth.

1768. Meinert (R.). **Über Trichophytie im Säuglingsalter.** [On trichophytosis in infancy.]—*Mschr. Kinderheilk.*, 97, 2, pp. 52–56, 3 figs., 1949.

Clinical details are given of an epidemic of trichophytosis (*Trichophyton gypseum*) [*T. mentagrophytes*] involving at least 80 infants in the summers of 1947 and 1948 at a children's hospital in Westphalia, 40 being treated during a three-month period in the latter year. The diagnosis presented great difficulties, the causal organism developing only on a honey- or maltose-peptone medium. Therapy consisted in the application of an emollient (2 per cent. salicyl vaseline) to the squamae, followed by several days' treatment with 0·5 to 1 per cent. ointment or a solution of prontosil (2 parts to 37 of acetone, 60 of alcohol, and 1 of glycerine), the former being more efficacious for small, isolated foci of infection and the latter for large, overlapping areas. Supplementary treatment was given for a period of up to four weeks in the form of a tar mixtura agitanda or 0·5 per cent. phenol powder. Attention is called to the urgent need for intensive purification of the hands, the infants' clothing, bedding, etc., and to the extreme infectiousness of the disease, which is frequently disseminated by the nursing staff.

1769. Weidman (F. D.) & Glass (F. A.). **'Repeat' cultures in dermatophytosis.**—*Arch. Derm. Syph., Chicago*, 57, 3, pp. 300–303, 1948. [*B.A.*, 23, No. 24341.]

By making a second set of platings [in cases of dermatophytosis] the authors obtained cultures in 5 per cent. of the cases where the first set had proved negative. Details of the work done are given.

1770. Nikolowski (W.) & Gasser (I.). **Zur Früherfassung der Mikrosporie mittels des Woodlichtes, zugleich ein Beitrag hinsichtlich der Fluoreszenz des Pityrosporon malassezii.**—[On the early diagnosis of microsporosis by means of Wood's light, together with a contribution to the subject of fluorescence in *Pityrosporon malassezii*.]—*Strahlentherapie*, 80, 1, pp. 141–146, 2 figs., 1949.

The occurrence of two cases of microsporosis (*Microsporum audouini*) in children at schools situated in different parts of Tübingen, Germany, prompted an intensive examination of the patients and their contacts by means of Wood's light. Fluorescence was observed not only in the hairs but also in the squamae infected by *M. audouini*. *Pityrosporum malassezii* [*P. ovale*] also induces fluorescence of the squamae, so that each fluorescing particle on the scalp in cases of suspected microsporosis should be microscopically and culturally examined. Some important contributions from the relevant literature are briefly discussed in relation to these observations.

1771. Bartůňková (Zofie) & Ptáčková-Nižňanská (Jarmila). **Epidemický výskyt mikrosporie se současnou alopecií parvimakulátou.** [Occurrence of an epidemic of microsporosis associated with parvimaculate alopecia.]—*Čas. Lék. česk.*, 89, 7, pp. 184–188, 5 figs., 1950. [Russian and French summaries.]

Particulars are given of an epidemic in Prague of microsporosis (*Microsporum audouini*), associated with alopecia parvimaculata. The microbiological and clinical methods of diagnosis are indicated and the histopathology of the hair at different stages of infection described. A complete cure is assured solely by X-ray epilation, but therapy by means of sex hormones also holds out some promise of success [cf. No. 998].

1772. Oster (K. A.) & Golden (M. J.). **The relationship of in vitro tests of antifungal substances to therapeutic problems.**—*Trans. N.Y. Acad. Sci.*, Ser. II, 12, 4, pp. 132–137, 1 fig., 1950.

The authors challenge the commonly held opinion that tinea pedis should not be treated with strong fungicides on the basis of findings obtained for the most part in *in vitro* studies on *Trichophyton mentagrophytes*. On the contrary, it should be treated on the same principles as those governing other infections, i.e., with strong and effective fungicides. Neglect of these therapeutic concepts may lead to the development of resistant strains of the fungus and to a chronic condition of infection. Trichophytid reactions, even of a severe order, should not constitute an objection to the use of optimal doses of a powerful therapeutic substance.

1773. Goldberg (H. C.). **Tinea barbae of the upper lip.**—*Arch. Derm. Syph., Chicago*, 61, 3, pp. 492–495, 1 fig., 1950.

A case of tinea barbae of the upper lip due to *Trichophyton granulosum* in a 34-year-old farmer is reported from Plainfield, New Jersey. Three weeks after his apparent cure, two months from the onset of the disease, the patient suffered a recurrence, which took another $2\frac{1}{2}$ months to clear up. Sulphathiazole (1 gm. every four hours) was given for the control of the secondary eruption, which rapidly involved the deeper tissues, accompanied by topical therapy with boric acid compresses and sulphathiazole ointment.

1774. Bittersohl (G.). **Die Behandlung der Trichophytie mit Antiphytin.** [The treatment of trichophytosis with antiphytin.]—*Dtsch. GesundhWes.*, 4, 12, pp. 538–540, 1949.

Large-scale experiments in the treatment of trichophytosis (mostly of the beard region) with antiphytin, a preparation of the Leuna Chemical Works containing phenol, salicylic acid, tar, and a new organic polysulphide compound, thioformol, with a 10 to 20 per cent. sulphur content, gave eminently satisfactory results.

1775. Nettleship (A.). **Propionate-caprylate mixtures in treatment of dermatophytosis.**—*Arch. Derm. Syph., Chicago*, 61, 4, pp. 669–673, 1950.

At the Alexander Blair Hospital, Detroit, Michigan, propionate-caprylate mixtures in ointment and powder forms [see next entry] proved clinically effective in the treatment of tinea infections caused by species of *Trichophyton* or *Epidermophyton*.

1776. Brewer (W. C.). **Treatment of dermatophytoses with propionate-caprylate mixtures.**—*Arch. Derm. Syph., Chicago*, 61, 4, pp. 681–683, 1950.

In private practice at Greencastle, Pennsylvania, 39 patients with dermatophytosis were successfully treated with ointment and powder containing propionates and caprylates [see preceding entry]. The average period required for healing of the lesions was a fortnight, a highly significant result in view of the fissures exhibited by 25 of the subjects at the outset of the treatment.

1777. Ormea (F.). **L'azione terapeutica della soluzione di Castellani nella tricofizia sperimentale della Cavia.** [The therapeutic action of Castellani's solution on experimental trichophytosis in Guinea-Pigs.]—*Riv. Ist. Sieroterap. ital.*, 24, 1, pp. 43–50, 1949. [*B.A.*, 24, No. 4561.]

In guinea-pigs experimentally infected with trichophytosis [*Trichophyton*] and treated with Castellani's solution the disease was milder and usually shorter than in the treated controls.

1778. Noguer (S.). **Nuevas aportaciones en el tratamiento de las epidermomicosis (nota clínica).** [New contributions to the treatment of the epidermomycoses (clinical note).]—*Act. dermo-sif., Madr.*, 40, 3, pp. 321–326, 1948.

Good results were obtained in the treatment of ten cases of epidermophytosis with 5 per cent. undecylenic acid or 20 per cent. zinc undecylenate, sometimes combined with a keratolytic in association with hydroxyquinoline and nipagin.

1779. Jung (H-D.). **Antiparasitär-biologische Therapie der Trichophytia barbae profunda.** [Anti-parasitic-biological therapy of trichophytia barbae profunda.] —*Z. Haut- u. GeschlKrankh.*, 6, 11, pp. 515–518, 1949.

Following a brief discussion of the advantages and disadvantages of X-ray epilation and sulphonamide therapy in the treatment of trichophytia barbae profunda, the writer reports excellent results from the University Skin Clinic, Greifswald, using a combination of cinnabar-sollux irradiations (20 minutes daily), trichophytin injections, and partial manual epilation.

1780. Schraufstätter (E.), Richter (R.), & Ditscheid (W.). **Zur Chemotherapie der Pilzinfektionen. II. Mitteilung. Austestungsmethoden fungistatischer Stoffe und Untersuchungen über 2, 2′-dioxy-5, 5′-dichlorodiphenylsulfid.** [On the chemotherapy of fungus infections. Note II. Methods for the evaluation of fungistatic substances and studies on 2,2′-dioxy-5,5′-dichlorodiphenylsulphide.]—*Arch. Derm. Syph., Berl.*, 188, 3, pp. 259–277, 1 graph, 1949.

To facilitate the evaluation of fungistatic compounds by large-scale *in vitro* tests, simple and convenient methods were devised for *Trichophyton gypseum* [*T. mentagrophytes*] and *Torulopsis minor* [*R.A.M.*, 29, p. 267], which are fully described and the resultant data tabulated and discussed. One of the most effective of the substances tested was 2,2′-dioxy-5,5′-dichlorodiphenylsulphide (D 25).

1781. Nékám (L.) & Polgár (P.). **Vitaminok és hormonok hotása pathogén gombák és baktériumok növededésére különös tekintettel a K-vitaminra.** [Influence of vitamins and hormones on the growth of pathogenic fungi and bacteria, with particular regard to vitamin K.]—*Orv. Hetil.*, 90, 16, pp. 500–503, 1 fig., 1949. [Abs. in *Med. Microbiol. Hyg.* (*Excerp. med.*, Sect. IV), 3, 2, p. 131, 1950.]

The bacterio- and fungistatic action of vitamin K was demonstrated in experiments in Budapest on staphylococci and *Trichophyton crateriforme* [*T. tonsurans*], indicating the possibility of its use as a preventive against infection.

1782. Tanissa (A.). **Action fongistatique et fongicide de l'huile de foie de morue et d'un mélange d'acides gras fortement non saturés (thérapique, arachidonique et clupanodonique) provenant de cette huile.** [Fungistatic and fungicidal action of cod liver oil and of a mixture of fatty acids strongly non-saturated (therapic, arachidonic, and clupanodonic) proceeding from this oil.]—*Ann. Derm. Syph., Paris*, Sér. 8, 9, 6, pp. 654–658, 1949.

The results of laboratory experiments performed in Lisbon to determine the fungistatic and fungicidal action of cod liver oil [No. 1246] and a mixture of fatty acids extracted from it on a number of common dermatophytes are tabulated and discussed. Cod liver oil proved to be fungistatic (growth completely inhibited for 20 days) to cultures on 4 per cent. dextrose agar of *Achorion* [*Trichophyton*] *schoenleini*, *Epidermophyton inguinale* [*E. floccosum*], *T. rubrum*, and *T. violaceum* at a concentration of 1 per cent., and to *Micro-*

sporum audouini, *M. felineum* [*M. canis*], *M. gypseum*, and *T. acuminatum* [*T. sabouraudi*] at 10 per cent. The times required for the exertion of a fungicidal action by cod liver oil were as follows: *T. schoenleini* 1 hour, *E. floccosum* 15 hours, *M. audouini* 9, *M. canis* 17, *M. gypseum* 77, *T. sabouraudi* 19, *T. crateriforme* [*T. tonsurans*] 21, *T. rubrum* 4, and *T. violaceum* 5. A mixture of the fatty acids (therapic, arachidonic, and clupanodonic) extracted from the oil proved to be about four times more potent than the oil itself.

1783. Sullivan (C. N.). **Ringworm of the scalp. Successful treatment of seven institutional cases by manual epilation and salicylanilide ointment.**—*Conn. med. J.*, 13, 12, pp. 1125–1128, 1949.

An outbreak of seven cases of tinea capitis (*Microsporum audouini*) in a children's home at New Britain, Connecticut, was successfully treated by daily manual epilation of the fluorescent hairs, visualized under Wood's light, and the application of 5 per cent. salicylanilide ointment. Five patients were cured within a period of two to eight weeks; there was one recurrence, which finally yielded to treatment with 10 per cent. copper undecylenate solution, and in one case a complete follow-up was impracticable, but recovery was considered probable. The production of an inflammatory reaction ('pseudokerion') by the ointment contributed to a rapid cure [No. 1259].

1784. Serri (F.). **Azione in vitro di alcuni antibiotici — penicillina, streptomicina, tirotricina, furazina — sullo sviluppo dei dermatomiceti.** [Action *in vitro* of some antibiotics—penicillin, streptomycin, tyrothricin, furazin—on the development of dermatomycetes.]—*Farmaco*, 3, 5, pp. 535–541, 2 graphs, 1948. [Abs. in *Dermatol. & Venereol.* (*Excerp. med.*, Sect. XIII), 4, 1, p. 18, 1950.]

Penicillin at 4,000 units per ml. and streptomycin (1 in 100) failed to inhibit the growth in synthetic Fildes-Lwoff solution or Sabouraud's nutrient agar of *Sporotrichum epigaeum*, *Achorion* [*Trichophyton*] *schoenleini*, *T. gypseum* [*T. mentagrophytes*], or *T. violaceum*, but penicillin exerted a measure of fungistasis on *T. pedis* [*T. interdigitale*] after 48 hours. All except *S. epigaeum* were inhibited by tyrothricin [No. 1135] after 24 hours, while furazin (5-nitro-2 furaldehyde semicarbazone) at 1 in 1,000 to 1 in 4,000 was fungistatic also to this species.

1785. Hillegas (A. B.) & McCracken (J. M.). **A turbidimetric method for antifungal testing.**—Abs. in *Amer. J. Bot.*, 36, 10, p. 810, 1949.

By using the colorimeter, the time required to determine antibiotic activity against *Candida albicans* and *Saccharomyces cerevisiae* was reduced to six hours. Brain-heart infusion medium was very satisfactory for culturing *Candida*, giving rapid growth with a minimum of mycelium. The feasibility of using the turbidimetric test to determine the activity of *Trichophyton interdigitale* by measuring the increase in turbidity due to spore germination on the colorimeter was investigated, and a sufficient gradient in optical density was obtained 24 hours after germination.

1786. Madsen (E.). **Nogle undersøgelser af forskellige stoffers fungistatiske effekt på Epidermophyton interdigitale.** [Some investigations on the fungistatic effect of different substances on *Epidermophyton interdigitale*.]—*Dansk Tidsskr. Farm.*, 23, 9, pp. 208–221, 19 figs., 1949. [Abs. in *Dermatol. & Venereol.* (*Excerp. med.*, Sect. XIII), 4, 4, p. 159, 1950.]

The following, among 16 substances tested for their fungistatic activity against *Epidermophyton* [*Trichophyton*] *interdigitale* in comparison with *p*-oxybenzoate, proved to be adequate: sulphur, ethyl *p*-oxybenzoate, undecylenic acid, and phenyl mercuric acetate.

1787. Sano (M.). **Sul contagio della epidermofizia inguinale (considerazioni personali).** [On the contagiousness of inguinal epidermophytosis (personal considerations).]—*Ann. Med. nav. colon.*, 54, 3–4, pp. 283–286, 1949. [Abs. in *Dermatol. & Venereol.* (*Excerp. med.*, Sect. XIII), 4, 4, p. 160, 1950.]

An epidemic of inguinal epidermophytosis [*Epidermophyton floccosum*: see next entry] in a community of sailors was attributed to the transmission of infected squamae in personal linen.

1788. Sano (M.). **Contributo allo terapia della epidermofizia inguinale.** [Contribution to the therapy of inguinal epidermophytosis.]—*Ann. Med. nav. colon.*, 54, 3–4, pp. 316–319, 1949. [Abs. in *Dermatol. & Venereol.* (*Excerp. med.*, Sect. XIII), 4, 4, p. 159, 1950.]

For the treatment of inguinal epidermophytosis [*Epidermophyton floccosum*] a solution of boric acid and benzoic acid in alcohol and water, ointment 'A' of salicylic acid, β-naphthol, and sulphur precipitate in vaseline, and ointment 'B', containing sulphate of mercury in vaseline, are recommended. The solution should be used as a bath for several evenings and the two ointments then applied alternately.

1789. Soo-Hoo (G.) & Grunberg (E.). **The anti-fungal activity of metal derivatives of 3-pyridinethiol.**—*J. invest. Derm.*, 14, 3, pp. 169–172, 1950.

At the Department of Chemotherapy, Hoffmann-La Roche Inc., Nutley, New Jersey, the fungistatic activity of 3-pyridinethiol, an aromatic thiol compound, and its metal derivatives was tested against two strains each of *Trichophyton mentagrophytes* and *Microsporum lanosum* [*M. canis*], two plant pathogens, and a number of bacteria. A strong action on both dermatophytes was exerted by the zinc derivative, the 50 per cent. growth-inhibiting concentration of which was 1 in 14,000. This compound proved to be of low toxicity to mice and free from irritating effects on the skin of guinea-pigs and the eyes of rabbits. *M. canis* was generally more sensitive than *T. mentagrophytes*.

1790. Oster (K. A.) & Golden (M. J.). **Studies on alcohol-soluble fungistatic and fungicidal compounds. I. Evaluation of fungistatic laboratory test methods.**—*J. Amer. pharm. Ass.*, 36, 9, pp. 283–288, 1947. [*B.A.*, 23, No. 29617.]

The two chief methods for determining fungistasis are compared and their limitations described. The term 'activity coefficient' is suggested to denote the degree of fungistatic activity displayed. Ten widely employed compounds were tested and their relative potencies determined.

1791. Golden (M. J.) & Oster (K. A.). **Studies on alcohol-soluble fungistatic and fungicidal compounds. II. Evaluation of a fungicidal laboratory test method.**—*J. Amer. pharm. Ass.*, 36, 11, pp. 359–362, 1947. [*B.A.*, 23, No. 29613.]

The authors present a critical account of existing procedures and describe a new *in vitro* method for the evaluation of alcohol-soluble fungicides. The fungicidal activities of ten compounds widely used in the treatment of foot dermatophytosis are compared by the use of the new technique.

1792. Oster (K. A.) & Golden (M. J.). **Studies on alcohol-soluble fungistatic and fungicidal compounds. VI. A critical review of fungistatic and fungicidal test methods.**—*Amer. J. Pharm.*, 121, 10, pp. 375–389, 1949.

This review of the literature on the current methods of testing remedies for dermatophytosis caused by *Trichophyton mentagrophytes*, *T. purpureum* [*T.*

rubrum], *Epidermophyton inguinale* [*E. floccosum*], and *Monilia* [*Candida*] *albicans* comprises sections on clinical tests, definition of terms, fungistatic test methods, fungicidal test methods, and testing of the actual anti-fungal preparation.

1793. Dósa (A.). **The effect of raphanin on the colonies of common pathogenic fungi.**—*Experientia*, 6, 1, pp. 18–19, 2 figs., 1950. [German summary.]

In laboratory experiments at the Institute of Forensic Medicine, University of Szeged, Hungary, raphanin (a thermostable, water-soluble, syrupy substance, isolated from radish seeds) inhibited the growth of various human pathogens, including *Cryptococcus hominis* [*C. neoformans*], *Trichophyton gypseum asteroides* [*T. mentagrophytes*], *Microsporum audouini*, and *Achorion* [*T.*] *schoenleini* at concentrations ranging from 1 in 100 to 1 in 4,000.

1794. Stahl (W. H.), McQue (B.), Mandels (G. R.), & Siu (R. G. H.). **Studies on the microbiological degradation of wool. I. Sulfur metabolism.**—*Arch. Biochem., N.Y.*, 20, 2, pp. 422–432, 2 graphs, 1949.

At the General Laboratories, Army Quartermaster Corps, Philadelphia, the degradation of wool by the action of *Microsporum gypseum* was followed analytically with respect to sulphur by means of the shake-culture technique. The maximum growth of the fungus occurred at eight days, after which there was a gradual loss in mycelial weight. Inorganic sulphate was found to be an end product of the fungal decomposition of wool.

1795. Reiss (F.) & Winston (Doris R.). **The effect of podophyllin on pathogenic fungi and its clinical application in the treatment of tinea capitis (preliminary report).**—*Exp. Med. Surg.*, 7, 2–3, pp. 229–230, 1949.

In view of the encouraging results obtained in laboratory experiments with podophyllin, which proved fungicidal to cultures of *Microsporum audouini* and *M. lanosum* [*M. canis*] in Sabouraud's 4 per cent. dextrose broth at a concentration of 0·1 per cent. after 15 minutes' contact, a clinical trial was undertaken with the substance at the Bellevue Hospital Medical Center, University of New York. Ten children, aged 3 to 13 years, who yielded positive cultures of the above-mentioned fungi (in addition to fluorescence under Wood's light), were treated with 1 per cent. podophyllin in a carbowax base, with beneficial results in all cases.

1796. Kimmig (J.). **Neuzeitliche Behandlung der Dermatomykosen unter besonderer Berücksichtigung der Mikrosporie.** [Up-to-date therapy of the dermatomycoses, with special reference to microsporosis.]—*Dtsch. med. Wschr.*, 75, 35, pp. 1137–1140, 1 fig., 1950.

The following conclusions as to the treatment of dermatomycoses are based on the author's experience at the Heidelberg University Skin Clinic, as well as on a perusal of the relevant literature. Among the antibiotics, streptothricin, tyrothricin, gramicidin, actidione, and bacillomycin are the most toxic to fungal pathogens of the skin. Synthetic antimycotics of high potency, both *in vitro* and *in vivo*, include the chlorated dioxyphenylmethanes and dioxydichloridediphenylsulphide and the quartan phosphonium base triphenyldodecylphosphoniumbromide (mycal). Of 33 children suffering from microsporosis [*Microsporum* spp.], 31 were cured in an average period of three months by the topical application of a solution of mycal in polyglycol (1 in 100 or 1 in 1,000) without X-ray epilation. The antimycotic action of thiosemicarbacide 741 and the halogen-containing ester Mc 2207, reported by Domagk at the German Dermatological Congress at Heidelberg, was confirmed by the writer in laboratory experiments.

1797. Sing (T. B.). **Clinical observations on the treatment of dermatophytosis with fatty acids.**—*Dermatologica*, 100, 2, pp. 105–109, 1950. [German and French summaries.]

A tabulated survey is given of the results of experiments at the Amsterdam University Clinic for Skin Diseases to determine the practical efficiency of curamycon (containing capronic, capric, caprylic, and lauric acids) in the treatment of dermatophytosis (mainly of the feet), caused mostly by *Epidermophyton* Kaufmann-Wolf, sometimes by *Trichophyton gypseum* [*T. mentagrophytes*]. As was to be expected from the successful outcome of the preliminary *in vitro* tests [No. 1526], the new mode of therapy proved very successful.

1798. Kwoczek (J.) & Moers-Messmer (W. v.). **Über die Wirkung der Sulfonamide auf pathogene Hautpilze.** [On the action of the sulphonamides on pathogenic skin fungi.]—*Derm. Wschr.*, 120, 4, pp. 101–105, 1 fig., 1949. [Russian, English, and French summaries.]

The results of *in vitro* experiments at the municipal infirmary of Mannheim, Germany, showed that action of the sulphonamides albucid, sulphathiazol, sulphadiazin, and de-ma on *Trichophyton gypseum asteroides* [*T. mentagrophytes*], *T. cerebriforme* [*T. flavum*], *T. rosaceum* [*T. roseum*], *Epidermophyton* [*T.*] *interdigitale*, and *Microsporum audouini* in maltose agar cultures was fungistatic but not fungicidal. Moreover, the high levels required even for the attainment of fungistasis could not be maintained for any length of time in human serum.

1799. Wharton (Martha L.), Reiss (F.), & Wharton (D. R. A.). **Active immunization against Trichophyton purpureum infection in Rabbits.**—*J. invest. Derm.*, 14, 4, pp. 291–303, 1950.

This contribution from the Department of Medicine (Dermatology), New York Hospital and Cornell University Medical College comprises a fully tabulated account and discussion of experiments on the immunization of rabbits against *Trichophyton purpureum* [*T. rubrum*]. Percutaneous applications of a heavy suspension of the fungus to large areas of the shaved and scarified skin invariably produced a chronic infection for periods of varying duration up to two years. Complete immunity was conferred by the injection of a saline suspension of the dried killed fungus emulsified with groundnut oil, Falba (a lanolin-like substance), and tubercle bacilli, and by a similar emulsion made with the residue from jojoba (*Simmondsia californica*) oil extraction of the fungus.

The results of reinfection experiments indicate that (*a*) rabbits can be reinfected; (*b*) after immunization by injections of emulsions of the killed fungus they may resist infection for upwards of 17 months; (*c*) they may become immunized by previous infection; and (*d*) reinfection may or may not duplicate the original infection. Precipitating antibodies were consistently detectable in the immunized and in some of the infected rabbits. On the basis of these studies it is suggested that antisera of therapeutic value may be produced.

1800. Kligman (A. M.) & Ginsberg (Dorothy). **Immunity of the adult scalp to infection with Microsporum audouini.**—*J. invest. Derm.*, 14, 5, pp. 345–358, 1950.

When the minimal fungistatic concentration of pre- and post-pubertal sebum was determined against three strains of *Microsporum audouini* and two of *M. canis*, the latter substance was not found to possess decisively superior

fungistatic activity. The inhibition curves of sebum extracted from the hair of individuals in various age groups were determined. Adult sebum was not more fungistatic than that of children by this method. The *in vitro* growth of both fungi on adult hair was found to be similar to that on children's: it was not increased by prior extraction of the sebum. Experimental infections of the adult scalp have been induced with both pathogens, indicating that post-pubertal 'immunity' is incomplete.

1801. Dobes (W. L.). **Treatment of tinea capitis with estrogenic hormones.**—*Arch. Derm. Syph., Chicago*, 62, 1, pp. 58–65, 1950.

None of the 13 patients treated with diethylstilboestrol for tinea capitis (*Microsporum audouini*) at the Grady Memorial Hospital, Atlanta, Georgia, recovered, but in six cases the hair was loosened sufficiently to permit of painless manual epilation. In 78·6 per cent. of 56 cases treated with oestrogenic hormones, combined with the topical application of salicylanilide ointment, cures were effected in an average period of 10·6 weeks. This mode of therapy is suitable only for male patients. The optimum dosage appears to be 10,000 to 20,000 international units of oestrogenic substance administered subcutaneously once a week for six weeks.

1802. Leland (L. S.). **Tinea nigra in the United States.**—*Arch. Derm. Syph., Chicago*, 61, 5, pp. 854–857, 3 figs., 1950.

A case of tinea nigra of the palm (*Cladosporium wernecki*) [Nos. 1041, 1068] is reported in a 15-year-old girl patient at the Walter Reed General Hospital, Washington, D.C., this being the first record for the United States. The black macules developed on the right palm three years before the time of observation (1948), following three years' residence at Tallahassee, Florida.

1803. Carrión (A. L.). **Yeastlike dematiaceous fungi infecting the human skin: special reference to so-called Hormiscium dermatitidis.**—*Arch. Derm. Syph., Chicago*, 61, 6, pp. 996–1009, 4 figs., 1950.

The available information on the clinical aspects and taxonomic relations of tinea nigra and chromoblastomycosis is received and discussed. Evidence is adduced from the author's experience in Puerto Rico that a fungus of the 'black yeast' type is etiologically implicated in each of the above-mentioned conditions, *Cladosporium wernecki* in the former [No. 1802] and *Fonsecaea* (*Hormiscium*) *dermatitidis* in the latter.

1804. Loewenthal (K.), Tolmach (J. A.), & Karpluk (Frances). **Dermo-epidermal type of sporotrichosis.**—*N.Y. St. J. Med.*, 50, 4, pp. 451–454, 4 figs., 1950.

Sporotrichum schencki was isolated from a granulomatous lesion following an abrasion on the back of the left hand of a 55-year-old male patient at the Skin and Cancer Unit, New York University-Bellevue Medical Center, which recurred after a year's quiescence, during which apparent healing had occurred. The clinical picture was anomalous. A skin test with *Sporotrichum* antigen was strongly positive in both immediate wheal and delayed reactions.

1805. O'Connor (W. B.). **Sporotrichosis: a report of 2 cases in unusual locations.**—*Wis. med. J.*, 48, 11, pp. 997–999, 4 figs., 1949.

Two cases of sporotrichosis (*Sporotrichum schenki*) are reported from Marshfield, Central Wisconsin, one in a 42-year-old truck-driver and the other in a

16-year-old schoolboy. They presented the typical clinical appearance but were unusual in regard to location, the former being on the thigh and the latter on the left cheek. The first patient was successfully treated by means of iodides and X-ray therapy and the second with potassium iodide alone.

1806. Cole (D. P.) & Lobitz (W. C.). **Sporotrichosis in New Hampshire.**—*New Engl. med. J.*, 243, 4, pp. 132–133, 2 figs., 1950.

Sporotrichum schencki was isolated on Sabouraud's medium from lesions on the right and forearm arm (originating in the index finger) of a 69-year-old woman at Hanover, New Hampshire, this being apparently the first record for the State and the eighth for New England. Therapy with potassium iodide was discontinued after 3½ weeks on account of intolerance, but three months after the first consultation the lesions were entirely healed.

1807. Pinkus (H.) & Grekin (J. N.). **Sporotrichosis with asteroid tissue forms: report of a case.**—*Arch. Derm. Syph., Chicago*, 61, 5, pp. 813–819, 4 figs., 1950.

The second North American case of sporotrichosis (*Sporotrichum schencki*) with asteroid tissue forms is reported from Michigan, involving the right hand of a 57-year-old male. This type of infection, rare in the northern hemisphere, is fairly prevalent in South America and more particularly in South Africa.

1808. Holland (M. H.) & Mauriello (D. A.). **Sporotrichosis.**—*J. med. Soc. N.J.*, 46, 9, pp. 419–420, 2 figs., 1949.

A case of sporotrichosis (*Sporotrichum schencki*), involving the right leg and foot of an 11-year-old girl, is reported from the Jersey City Medical Center, New Jersey. The disease is a rarity in the State, 80 per cent. of the cases recorded by Foerster in the United States (*J. Amer. med. Ass.*, 87, p. 1605, 1926) having occurred in the Mississippi Valley area.

1809. Nickerson (W. J.). **Biology of pathogenic fungi.**—xx+236 pp., 9 pl., 1 fig., 2 diags., 16 graphs, 7 maps, Waltham, Massachusetts, Chronica Botanica Company, 1947. $5.

In this volume, to which J. G. Hopkins contributes a foreword, the editor's aim has been to bring together papers by various workers discussing the biology, physiology, and biochemistry of fungi pathogenic to man. In addition to an introduction by the editor there are 11 chapters dealing, respectively, with the biology of the pathogenic Torulopsidoideae (by J. Lodder and A. de Minjer), chromoblastomycosis and its etiologic fungi (A. L. Carrión and Margarita Silva), the biology of *Pityrosporum ovale* (Rhoda W. Benham), the biology of *Coccidioides* (C. W. Emmons), recent advances of the Italian school of mycopathology 1941–5 (R. Ciferri and P. Redaelli), the action of sulphonamides and antibiotic agents on the pathogenic fungi (F. T. Wolf), geographic distribution of systemic fungus diseases (D. S. Martin), nutrition and metabolism of pathogenic fungi (W. J. Nickerson and J. W. Williams), metabolic products of pathogenic fungi (W. J. Nickerson), the lipids of fungi with special reference to pathogenic fungi (R. L. Peck), and respiration and fermentation of pathogenic fungi (W. J. Nickerson). Indexes to authors, organisms, and subjects are appended.

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